COSMOS AND COMMUNITY IN EARLY MEDIEVAL ART

BENJAMIN ANDERSON

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Jacket illustrations: (front) Solar diagram. The *Handy Tables* of Ptolemy (detail of fig. 57); (back) Star Mantle of Henry II (detail of fig. 17)

Frontispiece: Cloth of the Ewaldi. Central Europe, before 1000. (fig. 33)

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PREFACE AND ACKNOWLEDGMENTS

As an exercise in comparison, this study hopes to engage readers who have varying levels of familiarity with the cultures of early medieval Europe and western Asia. Perhaps no decisions run greater risks of annoying specialists and alienating generalists than those involving transliteration. My guiding principles have been to facilitate both ease of reading and access to further information. Names and terms from ancient Greek are rendered as found in the third edition of the *Oxford Classical Dictionary*; those in medieval Greek as found in the *Oxford Dictionary of Byzantium*; those in Arabic as found in the second edition of the *Encyclopedia of Islam* (exceptions: *j* is used for ج, and *q* for ق); and those in Persian as found in the online edition of the *Encyclopedia Iranica* (exceptions: *ch* for چ, *kh* for خ, and *sh* for ش). The exceptions allow a greater number of letters to be distinguished without diacritics, which are omitted from all transliterations, except for long vowel marks, which are suppressed in the discursive text but expressed in bibliographic references.

All years are A.D. unless otherwise noted. Regnal dates are given for caliphs and Byzantine emperors, and dates of office for patriarchs and popes. Names of constellations and planets follow standard English usage. The Qur'an is quoted in the translation of Yusuf Ali, and the Bible in the New English Translation of the Septuagint.

The pleasure of writing this book has been enhanced by the participation of many and a variety of people in its development. To name them all would be impossible: in future I must keep notes. The book would never have been written without the encouragement and guidance of my mentor, Dale Kinney, and the institutional support of the Graduate School of Arts and Sciences at Bryn Mawr College, the Deutsches Akademisches Austausch dienst, the Center for Advanced Study in the Visual Arts, and the Departments of History of Art and Visual Studies and of Classics at Cornell University. Shorter stays at the American Center for Oriental Research in Amman and the Deutsches Archäologisches Institut in Istanbul also left their marks.

Many of the arguments advanced here have been tested and refined in public fora. I am particularly grateful to audiences at the University of New Mexico, where I presented a version of the first chapter; the Index of Christian Art, where

I presented a version of the second; the Center for Advanced Study in the Visual Arts, where I presented a composite version of the third and the fourth; and the Institut für Byzantinistik, Byzantinische Kunstgeschichte und Neogräzistik, Ludwig-MaximiliansUniversität, Munich, whose members engaged with versions of the entire project at successive *Doktorandenkolloquien.*

In and around Philadelphia I benefited from the conversation and advice of Mehmet-Ali Ataç, David Cast, John Haldon, Christiane Hertel, Renata Holod, Ann Kuttner, Susanna McFadden, Lawrence Nees, and Yael Rice; in Munich: Franz Alto Bauer, Albrecht Berger, Rolf Schneider, and Avinoam Shalem; in Washington: Dana Byrd, Razan Francis, Julian Gardner, and Margaret Mullett; and in Ithaca: Annetta Alexandridis, Andrew Hicks, Verity Platt, Cynthia Robinson, and Courtney Roby. More distant correspondents included Persis Berlekamp, Matthew Canepa, Ivan Drpić, Trudy Jacoby, Marcia Kupfer, Colum Hourihane, and Joanna Story. On Christmas Eve in Dublin, Emily Bereskin and I designed an important mural, still unexecuted.

At Yale University Press, Gillian Malpass greeted the project with enthusiasm, and Katherine Boller was the ideal editor, Tamara Schechter the ideal editorial assistant. I am grateful to the two readers for generous and helpful critiques. The manuscript was ably guided through production by Heidi Downey and benefited substantially from the careful copyediting of Elma Sanders. At Cornell, Carrie Fulton, Betty Hensellek, and Aslı Menevşe assisted with the preparation of the manuscript. The costs of the illustrations were defrayed by a Kress Research Grant from the International Center of Medieval Art and by the Department of History of Art and Visual Studies at Cornell, while subventions toward production costs were supplied by the Hull Memorial Publication Fund of Cornell University and the Millard Meiss Publication Fund of the College Art Association.

This book is dedicated to my parents, who taught me the virtue of skepticism.

INTRODUCTION

Solitude and Community

The Roman historian Cassius Dio relates an anecdote about a near contemporary, the emperor Septimius Severus (193–211), who, “seeing that his sons were changing their mode of life and that the legions were becoming enervated by idleness, made a campaign against Britain, though he knew that he should not return. He knew this chiefly from the stars under which he had been born, for he had caused them to be painted on the ceilings of the rooms in the palace where he was wont to hold court, so that they were visible to all, with the exception of that portion of the sky which, as the astrologers express it, ‘observed the hour’ when he first saw the light [that is, the ascendant]; for this portion he had not depicted in the same way in both rooms.”[1]

Thus visitors to the imperial palace could be received in one of two rooms. The ceiling of each bore a depiction of the stars that were visible when Severus was born. These paintings could be understood in at least two different ways. Some visitors will have associated them with the emperor’s personal destiny. Herodian, another third-century historian, relates that the young Severus received portents that foretold his future rule, which he later described in his autobiography and commemorated in public monuments. A bronze equestrian statue in the Roman forum was said to depict a dream in which a stallion “raised Severus aloft” on that very spot, prompting his acclamation by the people.[2] For those who knew the story, the equestrian statue depicted the inevitability of Severus’s rule. An image of the stars that shone at Severus’s birth displayed in the palace whence he ruled will also have evoked the emperor’s unique fate.

However, just as an equestrian statue was a standard element in Roman state art that need not refer to a portent, so too were depictions of the heavens familiar elements of Roman domestic interiors, as in the images of the zodiac that appeared on the mosaic floors of elite Roman houses.[3] Such images could evoke a sense of pride in citizens of a mighty, perhaps universal, state. This was the sentiment expressed by a third-century rhetor while describing the images of the terrestrial world displayed in his city’s porticos: “It is a delight to see a picture of the world, since we see nothing in it which is not ours.”[4]

These two approaches to the paintings of the palace, the one emphasizing the unique destiny of the emperor and the other emphasizing the universality of Roman imperium, are not mutually exclusive. On the one hand, the universal understanding was available to all Romans as part of their shared store of cultural associations. To relate the image to the destiny of the emperor, on the other hand, required privileged information such as that which Cassius Dio provides in his account: this was no ordinary cosmic image but a depiction of "the stars under which [Severus] had been born." This information provides access to a more exclusive understanding of the paintings, without contradicting the universal understanding.

But the paintings in Severus's palace generated further exclusions still. Cassius Dio tells us that there were two rooms in which the emperor received visitors, and that the ascendant was depicted differently in each. Throughout Roman history, emperors were determined to prevent their subjects from predicting their dates of death and scheming about their succession. The representation of the horoscope with two different ascendants ensured that no outsider would share Severus's own knowledge regarding the time of his death.[5] The same strategy was employed 1,300 years later by Abu'l-Fazl, vizier of the Mughal emperor Akbar, who published four different nativities for his master, so that "the description of this cavalier of the plain of majesty . . . should remain hidden from the gaze of keen-sighted, penetrating, minute inquirers, as well as from the eyes of the evil-disposed and the inwardly blind."[6]

If the goal was simply to mislead, one painting with a false ascendant would suffice. However, the execution of two paintings with different ascendants advertised the impossibility of calculating the date of Severus's death to those who saw both. Imagine the following scenario: an astrologically informed visitor sees the first painting and decides to calculate the date of the emperor's death in secret. On a subsequent visit, he is shown into the second room, where he sees the painting with the different ascendant, and he is thrown into confusion.

The two paintings thus created a series of communities of knowledge, of which each was more exclusive than the previous. The broadest community consisted of all proud Romans, who looked at the paintings and saw nothing that was not their own. Of these some also recognized the emperor's horoscope and reflected on his unique destiny. Next came those who possessed the technical knowledge of astrology necessary to predict the emperor's date of death, followed by those who saw both rooms and knew this to be impossible. The smallest community comprised the imperial advisors with access to the whole truth, followed at last by Severus, sole ruler, and sole subject of the heavenly forces depicted on the ceilings of his own palace.

These few sentences from Cassius Dio reveal the full complexity of the nexus of political community, sovereign rule, and the depiction of the cosmos in antiquity. The paintings in the palace of Severus set into motion a play of revelation and concealment. On the one hand, they could induce in their viewers the delight of membership in a universal community. This delight was well described by Walter Benjamin, who in 1928 associated “delirious contact with the cosmos in community” with the “teaching of antiquity,” an experience that had been lost to his age: “It is the menacing error of the moderns to regard this experience as trite and dispensable, to leave it to the individual as a reverie on beautiful starry nights.”[7] On the other hand, the same viewers could simultaneously feel themselves excluded from a restricted circle of initiates.

In this game, the more one knows, the greater the sense of exclusion. The viewer who only sees “nothing which is not his” does not feel himself excluded at all; while the viewer who sees the unique destiny of a great man feels himself part of a community less only one (the emperor). Viewers trained in astrology would also recognize the further exclusions. The one viewer who knows everything is the emperor— and in this he recognizes himself to be completely alone.

So the paintings in Severus’s palace generate a set of relations extending from universal community to the solitary individual. In the palace, however, solitude is not a universal condition, experienced by all in contemplation of the stars. Instead, it is the unique possession of the ruler. At the ancient nexus of political power and the image of the cosmos, we find a tension between total inclusion and absolute exclusion, between the figure of world empire, on the one hand, and the emperor’s solitude, on the other.

BETWEEN ANTIQUITY AND MODERNITY

In the nearly two millennia between the reign of Severus and today, what has changed? In one sense the question is absurd. Everything changed: empires gave way to nation states, the cult of artistic genius was born, the Ptolemaic cosmos was overthrown in a Copernican revolution. Benjamin’s distinction between the communal ecstasy of the ancient experience of the cosmos and the solitary reverie of the modern also possesses a certain validity. The account of Cassius Dio places us in an explicitly political context, in which the figure of the emperor is central and unique. His solitude is radically distinct from the reverie of the stargazer, who could be anyone.

The emperor’s solitude is also far removed from the condition depicted in a 1970 painting by Anselm Kiefer entitled *Jeder Mensch steht unter seiner*

Himmelskugel (Every Man Stands Under His Own Dome of Heaven) (fig. 1). A lone figure stands in a wintry field, his right arm extended at an obtuse angle from his torso. Around and above him rises a transparent barrier shaped like the top half of an egg, formed by a thin wash of watercolor. From the standpoint of modern cosmology, the "dome of heaven" is an anachronistic term. We no longer believe, as the ancients did, in a spherical cosmos within which all on earth stand under the dome of the fixed stars. Nor is this what Kiefer depicts. We view his dome of heaven not from a divine perspective beyond the limits of the cosmos but from the edge of a barren field, whence we see that the dome stands under a further sky. The dome of heaven is no longer the canopy that covers us all but an isolating bubble, the figure within "living in its prison as though in some immense realm."[8] However, even in this image of post-Copernican alienation, the image of the cosmos is still linked to a kind of community. The outstretched arm of the figure under the dome evokes the Hitler salute, an iconographic element that figured prominently in Kiefer's early work.[9] In the popular imagination, this is a gesture made by one person to another, or by a crowd of people in unison, in one of those rallies that sought to enact the fascist dream of organic community.

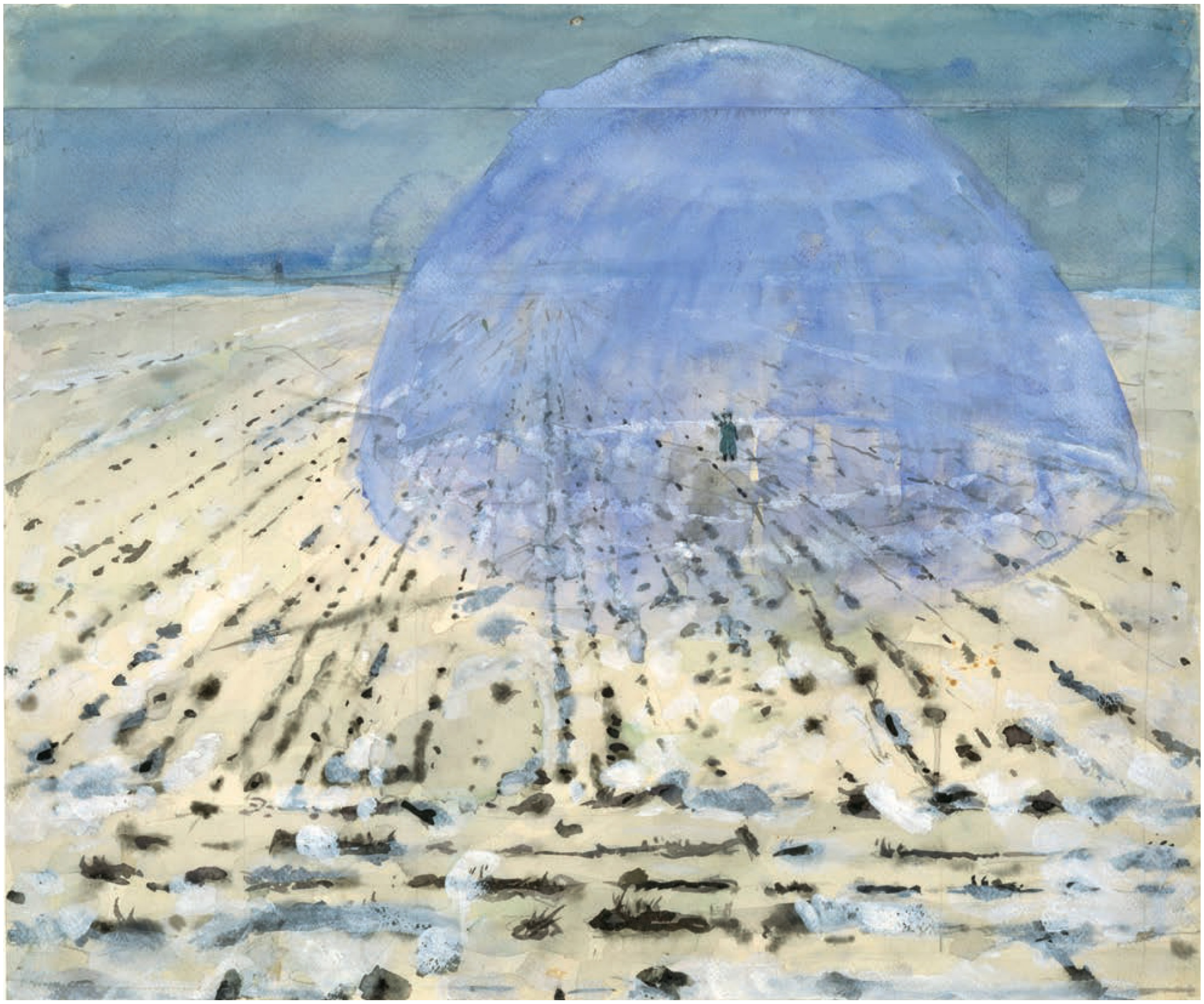


FIGURE 1
Anselm Kiefer, *Jeder Mensch steht unter seiner Himmelskugel*, 1970. Watercolor, gouache, and graphite pencil on joined paper, 40 × 47.9 cm. The Metropolitan Museum of Art, New York. Denise and Andrew Saul Fund, 1995.

There is another, less explicitly historical way of looking at Kiefer's painting. The longitudinal furrows at the bottom of the picture mark off a space for us as viewers that separates us from the figure under the dome, but it also acknowledges our presence. Furthermore, at the point where the left edge of the dome meets the horizon, a brushy efflorescence of watercolor intimates the presence of another, more distant dome, and thus the possibility of a third figure. When I look at the painting, I do not see a dome that surrounds me, but perhaps it has left its trace in the blue tint that adheres to snow and sky alike. From one solitary figure, Kiefer's painting can expand to embrace three: the viewer, the man in the field, and a possible figure under a possible dome on the horizon. Standing under a dome of heaven is our shared condition. The domes isolate, but they also allow their inhabitants to see each other.

Both in antiquity and in modernity, then, the image of the cosmos mediated between solitude and community, albeit in radically different and historically contingent fashions. This study, for its part, is concerned with a specific interval between antiquity and modernity, roughly from A.D. 700 to 1000, in those regions formerly gathered under the Roman and Sasanian Empires that we today call Europe and the Middle East.[10] Its purpose is not to identify the moment when the ancient gave way to the modern, nor to argue that the two are essentially the same. It reaches instead toward an account that would, in Aby Warburg's formulation, "perceive antiquity, the Middle Ages, and the modern era as interconnected epochs."[11]

One could tell this story by emphasizing retreat and collapse. In the year 2000, a major study of medieval images of the cosmos titled a chapter on the period before 1100 "the interrupted tradition," explaining that "only the most negligible portion of this area of knowledge [of the stars] was integrated into the structure of medieval thought and recognized as a usable instrument of the Christian mastery of life."[12] The church fathers and their distrust of astrology are held responsible: a militant monotheism swept the clamorous pantheon of pagan constellations out of the night sky.[13] We might also expect the collapse of Roman and Sasanian hegemony to have stripped the cosmic image of its potential to express rule. As the Roman Empire became the "Byzantine," the territory of the former world power was reduced to the Balkans and Anatolia. Could its citizens have still experienced the delight of seeing a picture of the world in which nothing stood outside the boundaries of their patria?

Indeed, it would be perverse to deny the significance of the triumph of monotheism and the fall of Rome for the history of the cosmic image. The traditional constellations had plenty of Christian opponents. In the sixth century, Gregory, Bishop of Tours, composed a treatise that distilled the science of astronomy to those elements necessary for monastic timekeeping and rejected the pagan names of the constellations.[14]

The collapse of Rome provoked explicit acknowledgment that the ancient fiction of global hegemony could no longer be sustained. As a Byzantine author of the seventh century lamented: "From the Ocean, that is of Scotia, from Britannia, Hispania, Francia, Italia, Hellas and Thrace and Egypt and Africa and upper Africa, the boundaries of the Romans and the statues of their emperors were seen until our time; for all peoples submitted to them at God's command. But now we see Romania reduced and humbled."[15]

Still, stars and state structures are resilient things. Gregory's campaign to depaganize the night sky attracted few adherents. By the eighth century, scribes were busy copying the most useful parts of his treatise into manuscripts where they sat alongside images of the very constellations that he had rejected.[16] For a Byzantine author of the same era, astrology represented the surest route back to world rule: “Seth, as we have read, was the first to use this art. The Chaldaeans received it from him; then it went from them to the Persians, and from them to the Greeks, from whom it was transferred to the Egyptians, from whom the Romans were also initiated. Then finally the Arabs got it. And all the nations that have been mentioned had nearly cosmocratic and victorious dynasties as long as they used it. Therefore I thought it necessary to renew this useful science among the Romans and to implant it among the Christians so that they might be deprived of it nevermore.”[17]

In fact, traditional approaches to depicting the cosmos were largely spared the early medieval transformations that most other elements of ancient visual culture underwent.[18] Ruler portraiture, for example, experienced a radical revaluation. For Septimius Severus in the third century, an equestrian statue was a natural expression of majesty. When a statue of a mounted emperor was displayed at Aachen in the ninth century, however, a Carolingian poet debated its origins: did the sculptors make it as a sop to a tyrant, “to soothe a raging lion through their art,” or did “the dreadful man himself commission the likeness, which is often the prerogative of pride”?[19] The last equestrian statue in Constantinople, erected in the early seventh century, depicted not the reigning emperor but his brother.[20] By the eighth century, residents of the city mistook an old statue of a charioteer for a depiction of Constantine, the city’s imperial founder.[21]

In medieval Damascus, stories circulated regarding an equestrian statue discovered during the construction of the Great Mosque in the eighth century. The rider held hidden in his hand a grain of wheat and a grain of barley, which was understood to mean that the statue protected the city’s grain supplies from weevils.[22] Imperial statues were still around, but no new ones were being made, and the old ones generated a new set of interpretations that were no longer based on the Roman ideology of rule.[23]

In the fifth and sixth centuries, as the Roman state and most of its citizens became Christian, it seemed that an increasingly sophisticated visual culture rooted in Christian narratives and doctrines might provide a new shared set of images, one that was descended from but distinct from the art of Greco-Roman polytheism.[24] The first break in this process came in the seventh century, with the rise of Islam. On the one hand, certain Christian images retained their significance for Muslim viewers. For example, a ninth-century tradition held that when the Prophet Muhammad had cleared the Ka‘ba of the pagan idols he preserved a picture of Mary and Jesus.[25] On the other hand, the early Muslims strongly objected to imagery of the crucifixion and resurrection, and in the later seventh century Islamic rulers ordered destruction of crosses in the possession of Christians.[26] In the following century, a diametrically opposite doctrine of “iconoclasm,” which censured images of Jesus and Mary but promoted the depiction of the cross, arose in Byzantium.[27] In the ninth century, the Carolingians carried out a controversy with the bishops of Rome over the proper use of images in Christian worship.[28] At no point in the period between 700 and 1000 did Christian imagery generate a shared basis for the visual cultures of Europe and the Middle East.

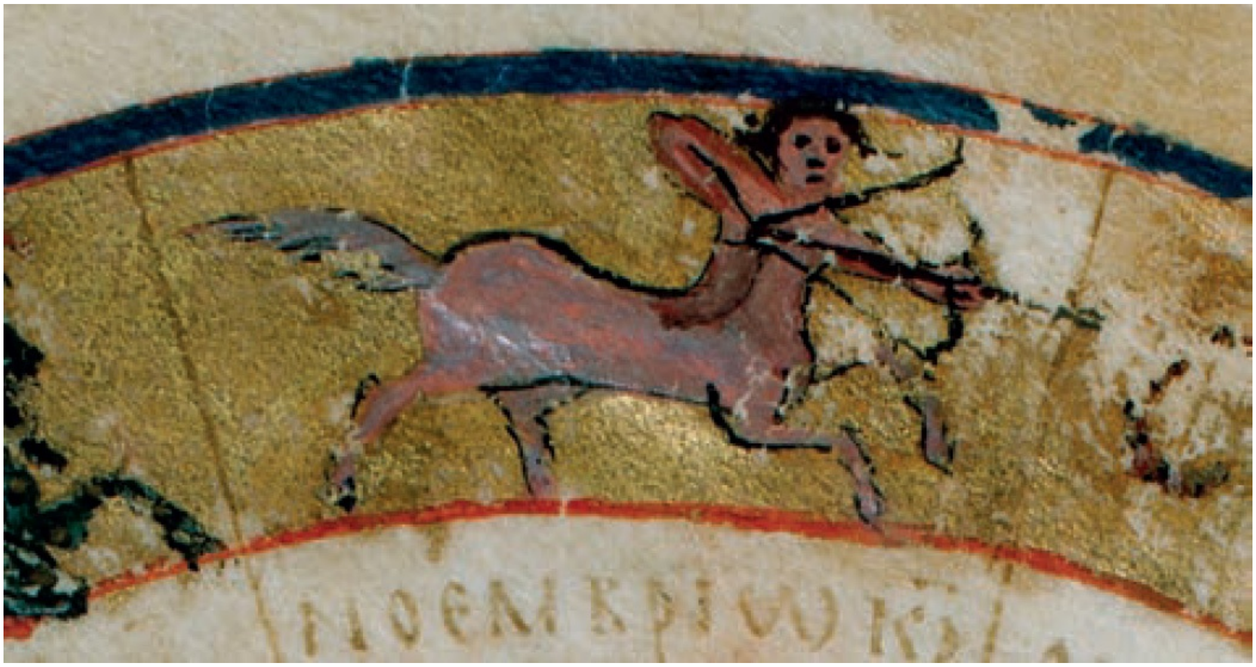


FIGURE 2 Sagittarius. The *Handy Tables* of Ptolemy (detail of fig. 57). Probably Constantinople, 8th or 9th century. 28 × 20 cm (full folio). Vatican City, Biblioteca Apostolica Vaticana, Vaticanus graecus 1291, fol. 9r. © 2017 Biblioteca Apostolica Vaticana.

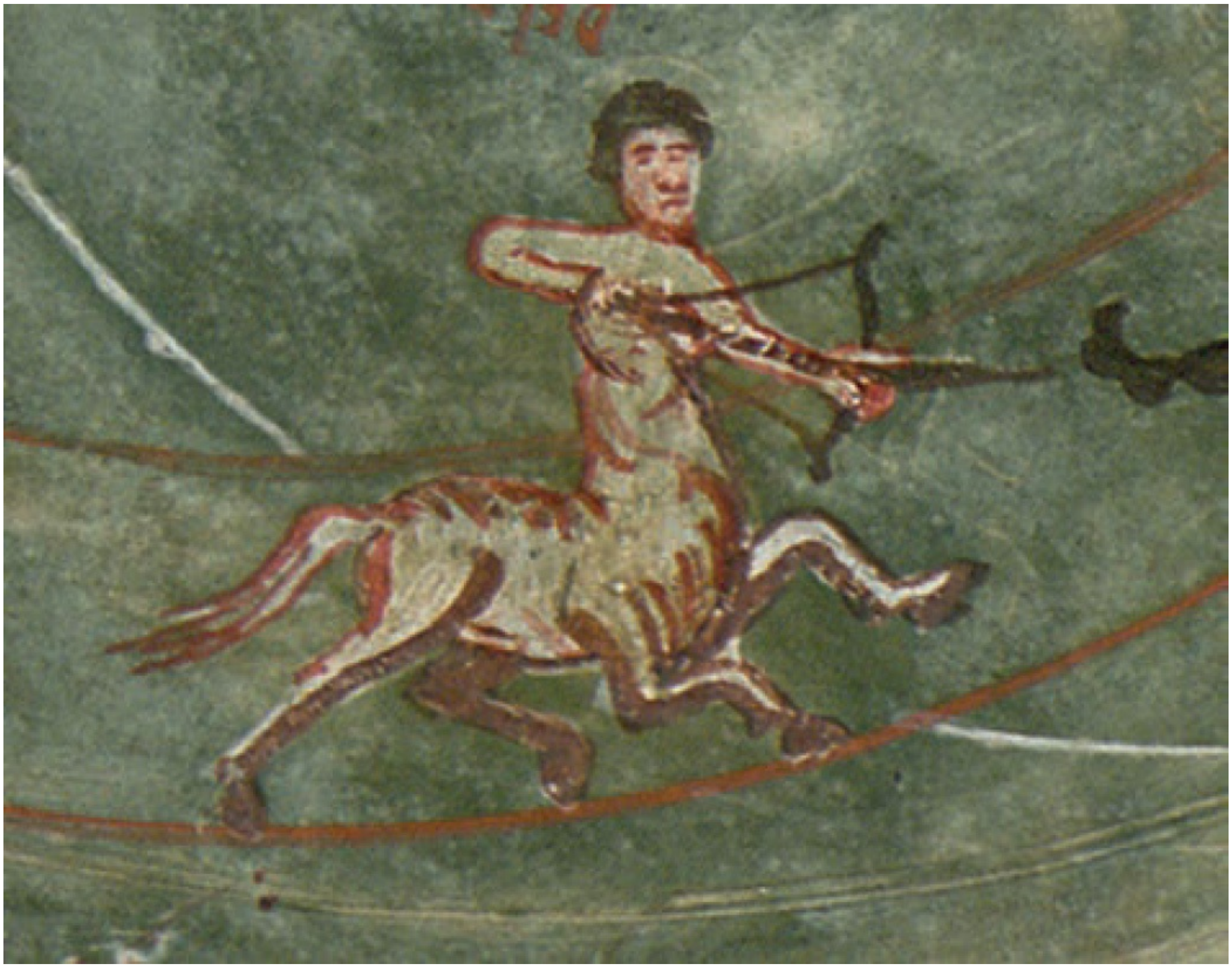


FIGURE 3

Sagittarius. Collection of astronomical-computistical and natural-scientific texts (detail of fig. 48). Region of Salzburg, 818. 32 × 23 cm (full folio). Munich, Bayerische Staatsbibliothek, Clm 210, fol. 113v.

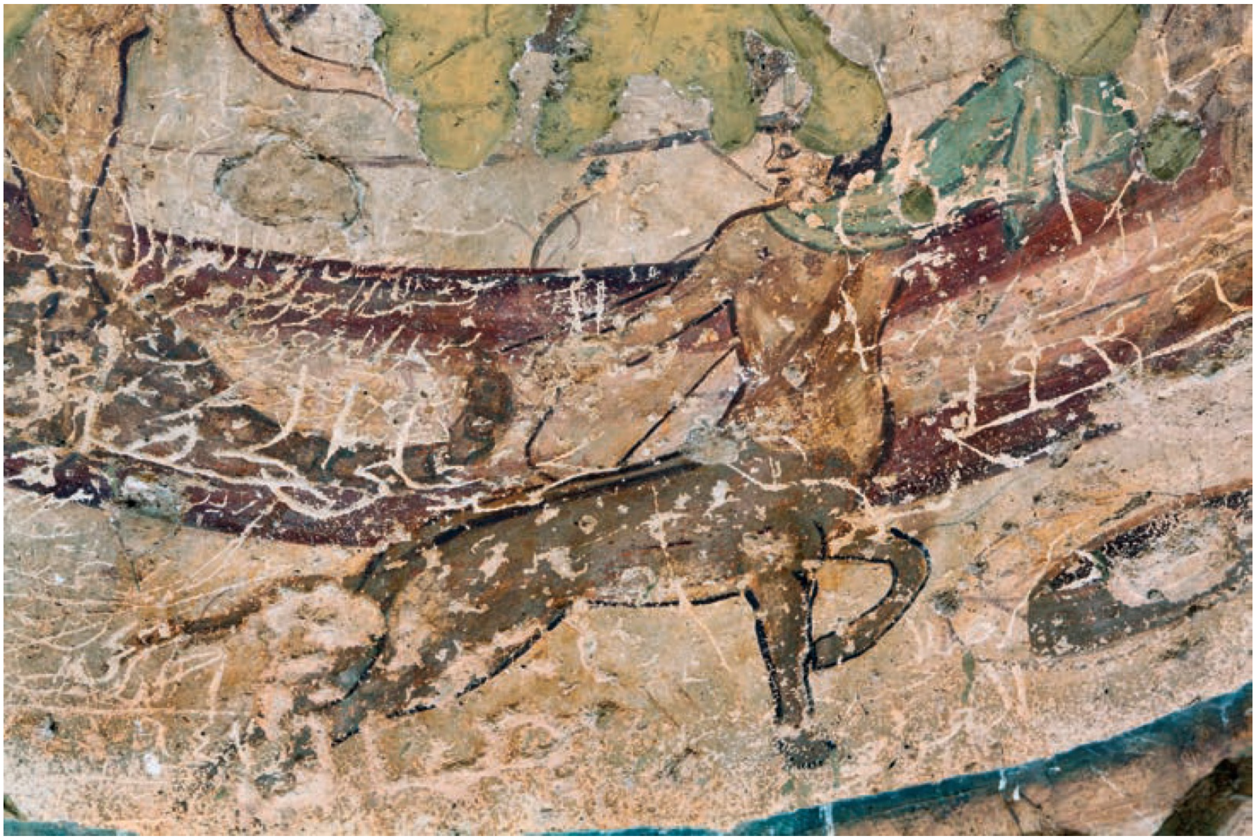


FIGURE 4
Qusayr ʿAmra, caldarium, cupola, fresco with Sagittarius. Early 8th century.

In this world of rapid and radical changes— political, religious, and cultural — images of the cosmos formed a bastion of iconographic and stylistic conservatism. Sagittarius in a Byzantine manuscript of the ninth century looks more or less like Sagittarius in a contemporary Carolingian manuscript (figs. 2, 3). In the frescoes decorating the dome of an eighth-century bathhouse built for a Muslim prince, the archer turns to take a Parthian shot, but would still have been recognized by a Roman viewer of seven centuries before (fig. 4). The persistence and stability of cosmological imagery presents an opportunity to track a single iconographic cluster as it enters the three primary artistic traditions of the Middle Ages (the "Western," "Byzantine," and "Islamic") at the very moment of their divergence.

An important body of recent scholarship has drawn attention to other elements shared by these three traditions, emphasizing in particular the links forged by commerce and diplomatic exchange.[29] I would not wish to argue that images of the cosmos never traveled, but I know no account of such images circulating via trade or diplomacy in the early Middle Ages. Later, to be sure: thus, in 1140 a merchant in Aden sent a carpet decorated with the zodiac as a gift to a colleague who was “sojourning on the Malabar coast of India,” while in 1232 an Ayyubid sultan presented Frederick II Hohenstaufen with a gemencrusted celestial globe of gold further adorned with mechanical representations of the sun and moon moving in their courses.[30] In the early Middle Ages, however, knowledge of the workings of the cosmos was a source of antagonism between rulers, of jealous speculation regarding the capacities of rival courts and boasting of the talent housed at home.[31]

Perhaps this is why we hear nothing of images of the cosmos being exchanged between states. Similarities between Byzantine, Frankish, and Islamic images of the cosmos can be explained by their shared roots in ancient tradition and do not require direct contact.

Therefore this book does not examine contact or exchange, but rather compares three distinct tracks in the development of medieval images of the cosmos. It focuses as much on differences as on similarities, as much on antagonisms as on common ground. For while the iconographic and stylistic conservatism of images of the cosmos provides a means of comparison, it simultaneously obscures profound shifts in the functions of those same images. Some of these shifts were diachronic and global. For example, in Roman imperial art, the image of the zodiac was so ubiquitous as to be banal. It was simply “part of a neutral technology of life,” appearing on the floors, walls, and ceilings of temples and public buildings, on rings and silver plates, on monumental arches and public clocks.[32] By the year 700, however, the zodiac was no longer so omnipresent. It appeared only in more restricted and clearly delimited contexts, and most often between the covers of a book or behind closed doors.

This shift from the monumental and ubiquitous to the discreet and specific was common to Byzantine, Islamic, and European traditions alike, although it presents itself in especially vivid fashion in certain regions. In greater Syria, for example, two of the greatest ancient temples featured monumental images of the cosmos: figures of the seven planets surrounded by the twelve signs of the zodiac carved into the ceiling of the north thalamos of the Temple of Bel in Palmyra, and a tapestry depicting “a panorama of the heavens, the signs of the zodiac excepted” before the sanctuary of the Temple in Jerusalem.[33] In later antiquity the zodiac was frequently encountered on the mosaic pavements of synagogues, where it joined other Temple-derived elements such as shofar, lulav, and ethrog.[34] At the synagogue of Naʿaran, outside Jericho, the figures of the constellations were eventually removed, perhaps around 600, even as the identifying inscriptions were retained.[35] The eighth-century Great Mosque of

Damascus, built within the temenos of another great Syrian temple, likewise evokes the heavens in its inscriptions, not its images (as we shall see in chapter 1). Images of the cosmos did not disappear from the region, but the most striking early medieval rendition appears in the exclusive, political space of a prince's bathhouse (chapter 2), in contrast to the more communal, religious spaces of earlier centuries.

Other shifts were local and reflected the diverging functions of cosmic imagery within separate traditions. In the Frankish realm, images of the cosmos traveled between and among different types of elites, from imperial court to cloisters and to bishops' sees. Thus their production and consumption played a role in the formation of a shared elite identity (chapter 3). In the Byzantine Empire, conversely, the depiction of the cosmos became a site of conflict between emperors and elites, and even fundamental issues, such as the shape of the universe itself, failed to generate consensus (chapter 4).

In order to analyze these shifts, this study focuses on the theme that was introduced through the story of Severus's palace: the ability of specific images of the cosmos to mediate between an individual and a community. The analytical opposition between solitude and community allows the monuments to speak both in concert and against each other, and regardless of their assigned "citizenship," or their origins in a specific state. Therefore the comparative approach adopted here does not require (for example) that a Byzantine monument speak for Byzantium. It can speak for some Byzantines and against others, in a mode of address that resembles that of some Carolingian monuments and is radically different from others.

TRADITIONS OF SCHOLARSHIP

The adoption of solitude and community as a guiding analytical dichotomy draws on the rich tradition of art historical reflection on images of the cosmos. The history of this engagement goes back to the origins of the discipline and involves some of its founding figures. It deserves to be studied in a volume of its own; here it is considered merely to the extent that it can help to refine the terms of the analysis. In this respect, two distinct scholarly traditions deserve particular attention, of which the first is primarily associated with Aby Warburg, the second with Hans Peter L'Orange.

While the Hamburg art historian Aby Warburg (1866–1929) studied a diverse and complex range of topics, his primary legacy was to promote investigation of a set of questions regarding the survival and revival of elements of ancient art in the Middle Ages and the Renaissance. In the standard version of this story, which ultimately derives from the critical writings of Raphael and Vasari, the achievements of ancient art were preserved in debased form by medieval artists who were mere copyists and possessed no powers of invention. It was left to the artists of the Renaissance, and in Italy above all, to breathe new life into these images, to free them from centuries of accreted convention and to understand them once more in a genuinely humane fashion.

Elements of this narrative were applied to the history of astronomical imagery in an early essay by the Viennese art historian Alois Riegl (1858–1905) on medieval illustrated calendars. As Riegl saw it, medieval artists adopted ancient astronomical imagery without alteration, whereas in their depictions of the months they undertook the "invention of new types." This distinction might provoke reflection on the tension between terrestrial transience, as depicted by the seasonal labors, and celestial constancy, as depicted by the never-changing stars. This was not the approach taken by Riegl, who argued that medieval scholars had made no advances in astronomy, and were thus content to copy the same texts and images over and over again.[36]

Riegl never returned to the image of the cosmos, and it was left to Warburg to develop astronomical iconography into a prominent focus of reflection for cultural historians. His earliest remarks on the topic followed the same narrative as Riegl. In a lecture delivered in Hamburg in 1908, for example, Warburg characterized the preservation of the images of the ancient gods in the form of medieval constellations as an ossification of tradition: "No new symbols at all were available to medieval cosmology as a product of independent research." It was the artists of the early Renaissance who first managed to "release the fair Olympus of the gods from . . . a heraldically ossified visual vocabulary of astrology."[37]

This approach to medieval astronomical imagery was taken up by two of Warburg's closest collaborators, Fritz Saxl (1890–1948) and Erwin Panofsky (1892–1968).[38] The first volume of Saxl's *Catalog of the Astrological and Mythological Illustrated Manuscripts of the Latin Middle Ages* appeared in 1915. In the introduction, the achievements of ancient art are set up as the standard against which medieval paintings are to be judged. Saxl introduces a strong distinction between Carolingian painting, in which ancient style and iconography were faithfully preserved, and later medieval works, whose style became degraded even as the content was maintained.[39]

The same distinction between style and content appears again in a 1933 essay by Saxl and Panofsky: "Medieval Western art was unable, or what comes to the same thing, unwilling to retain a classical prototype without destroying either its original form, or . . . its original meaning.”[40] The Carolingians are still spared this reproach, as they “conscientiously, and sometimes most successfully, imitated their prototypes in style and technique as well as in mythological subject matter.”[41] Only in the later Middle Ages does the “decomposition of the classical type” set in.[42] Essentially the same narrative is provided in Panofsky’s 1960 monograph on *Renaissance and Renascences in Western Art*, where the later medieval division of form from content is elevated to the status of a “principle of disjunction.”[43]

The chronological parameters of the “Warburgian” narrative, in which a vital Antiquity and Renaissance bracket an ossified Middle Age, were paralleled by a geographical schema that located natural philosophy in the rational West and magic in a superstitious East. As Rembrandt Duits has observed, “Warburg entertained the notion that the belief in the stars as active agents wielding power — astrology in the narrow sense of the word— was a product of ‘primitive’ thinking cultivated in the ‘irrational’ Orient, as opposed to the more neutral mapping of the sky practised by the rational ancient Greeks,” and Saxl perpetuated this duality in his studies of the origins of the later medieval iconography of the planets.[44] In the 1933 essay, Panofsky and Saxl selectively addressed Byzantine and Islamic images of the stars, but only to reconstruct lost ancient prototypes. They deny inventive agency to the painter of the dome at Qusayr ʿAmra (to be considered in chapter 2): “The author . . . simply transposed to the ceiling the conventional and extremely unrealistic celestial maps shown in the illuminated manuscripts.” The result was an image that failed to display “those constellations which a spectator could really see in the sky,” as a “modern painter” would do. “The requirements of the modern mind are met for the first time in the second quarter of the fifteenth century,” by the painters of Renaissance Florence.[45] At best, the East serves, like the Middle Ages, to transmit a debased form of ancient genius to its proper modern European heirs.[46]

The researches of Saxl and Panofsky massively expanded the treasury of medieval astronomical imagery available to scholarship, but little in their interpretations of the material would have surprised the Warburg of 1908. In his later work, however, Warburg abandoned his strictly historical narrative of ancient invention, medieval stagnation, and Renaissance recovery, and developed a new approach that was based more on the function of astronomical images than on their appearance. The term that he used to describe that function was *Denkraum,* which we might translate as a “space for reflection.”[47]

The anti-evolutionary turn in Warburg’s thought first becomes explicit in a long piece on Luther. This was delivered as a lecture in 1917 but not published until 1920, by which time Warburg had been hospitalized for a nervous condition (he was released in 1924). The piece begins with a distinction between logic, “which creates a space for reflection between man and object,” and magic, “which destroys precisely this space for reflection through a superstitious . . . coupling of man and object.” Warburg then explains that the polarity between the two approaches is not epochal. Both exist at all times. Thus, the analysis of the eternal tension between the two promised a more profound approach than the “historiography whose doctrine of development is determined by exclusively temporal concepts.”[48]

Warburg applied the concept of *Denkraum* to astronomical imagery in a lecture that he delivered in 1925, in memory of the recently deceased pioneer in the study of astronomical iconography Franz Boll. One passage provides a summation of Warburg’s mature approach to cosmological imagery: “Every witness that will appear tonight, familiar and unfamiliar, textual and visual, reveals the observing man in a struggle for space for reflection. Fluctuating between the visual assertion of mythological causes and the numerical assertion of calculable causes, the constellations have for him— and indeed within the personalities of individual researchers (as with Ptolemy)— an ambivalent, polarized character, that on the one hand demands cultic veneration in magical praxis, and on the other hand has the value of a distant, objective delimitation of the sparkling entities of outer space— one would like to say on the ‘vault of heaven’— the entire Promethean tragedy of man lies in this phrase— there is no solid vault over us. But we must make use of this entirely rough image nevertheless, in order to have an aid, however so arbitrary, to help our eye as it stands, clueless, faced with infinity.”[49]

The constellation is at once an image of a deity, an object that “demands cultic veneration,” and a set of coordinates, an “objective delimitation.” It has been detached from the context of a developmental history, and has become instead a site through which multiple, persistent tensions are mediated: the tension between a human subject and an objective world, and the tension between apprehension of the outside world as a composite of willful agents (demons and demigods, philanthrophic and malevolent) and as a symphony of quantifiable and predictable motions (the regular courses of the stars in the sky). Ultimately we arrive at the tension between radical alienation from the world around us— a cold universe that does not care if I live or die— and excessive familiarity— the animist nature that is always meddling in my affairs. A space for reflection is created not by resolving this tension in favor of a mechanistic worldview but by developing a symbolic language that allows people to forge meaningful connections with their surroundings. In Warburg's famous formulation of 1923: "Telegram and telephone destroy the cosmos. Mythical and symbolic thinking forge physical space [Raum] into a space for devotion or reflection [Andachtsraum oder Denkraum] in a struggle for the spiritual bond between man and the surrounding world. The instantaneous electrical connection kills this space."[50]

To some, Warburg's concept of *Denkraum* appeared to be an unfortunate remainder of his mental illness. Thus Ernst Gombrich, Warburg's first biographer and director of the Warburg Institute for two decades, explained, "haunted as he was by anxieties, he needed the reassurance of distance and detachment."[51] However, in the context of the present investigation Warburg's concept of *Denkraum* is doubly useful. First, it provides an account of the attraction of the cosmological image to early medieval viewers that does not appeal solely to the concept of "antiquity." Certainly the ancient origins of technologies for imaging the cosmos were invoked by some of their medieval viewers. For example, the Carolingian poet Theodulf, after a description of an image of the cosmos that invoked the traditional names of the twelve signs of the zodiac and the seven planets, apologized for using the "gentile names," which, he explained, simply represented a "custom of antiquity."[52] But ancient pedigree was rarely granted much more than passing mention. It was not the primary preoccupation of most medieval viewers of cosmic imagery, nor will it be ours. Far more important is the utility of such images to address present concerns for medieval audiences.

Second, Warburg's notion of the constellation as a site of multiple unresolved tensions provides a more dynamic model for its interpretation than the lexical approach adopted by some iconographic studies. It is not very helpful to ask what images of this kind "mean," as if they were texts in a foreign language that could be translated with grammar and dictionary. Of greater interest is the question of what they "do": what work they perform for the people who find them useful. Certainly one of their tasks could be to generate meaning, but this will rarely (if ever) resolve into a "program" or a "statement" of the sort that results from a more static approach to iconography.

Nevertheless, Warburg's concept of *Denkraum* remains insufficient for a full account of the cosmic image as a mediator between an individual and a community. For Warburg, the functions of the cosmic image were rooted in the tension between subject and world. The image serves as an aid to orient an individual within a confusing and possibly hostile universe: it may tame the chaos of nature, but not of other people. For an account of the political and social functions of cosmic imagery, it is necessary to turn to a different scholarly tradition.

The approach to cosmic imagery taken by Warburg and his disciples has the character of a school. It has a founder and a genealogy, and its reproduction is assured by the research institute that houses Warburg’s library and the journal that bears his name. The second scholarly tradition, by contrast, is a recurring theme in the scholarship of the twentieth century, that of the “ruler in the cosmic setting,” that links together a number of disparate scholars. The most important contributions on this theme were made by Ernst Herzfeld (1879–1948), Karl Lehmann (1894–1960), and Hans Peter L’Orange (1903– 1983). All three were trained as archaeologists, a background that may have encouraged them to consider astronomical imagery not as part of developmental narrative but in its immediate spatial contexts.

The first contribution to this discussion was made by Herzfeld, the excavator of Samarra and of Persepolis, who devoted an essay of 1920 to the Throne of Khosrow.[53] A number of late antique and medieval texts, which we will consider in chapter 1, describe a Sasanian throne that was surrounded by moving representations of the planets and the sphere of the fixed stars, thus providing a cardinal example of an astronomical image that served the glorification of a ruler. Herzfeld argued that these texts referred to an actual monument, which he attempted to reconstruct by reference to surviving objects.[54] Whereas the Warburgians, in particular Saxl and Panofsky, arranged a wide variety of monuments in a developmental chain, Herzfeld drew on a wide variety of comparanda to reconstruct a single monument. The Warburgian corpus, moreover, composed almost entirely of manuscripts, implied that the function of cosmic images was to transmit knowledge, while Herzfeld’s corpus, which included a relief depicting the horoscope of a Hellenistic ruler and representations of the apotheosis of the Roman emperor, implied a context in the glorification of powerful men. Notably, Herzfeld’s article is the only representative of this “archaeological” tradition that called forth a response from the Warburgians. In an essay published in 1923, Saxl insisted that the “Mythologem” of the Throne of Khosrow belonged to an exclusively “oriental” tradition that was distinct from the “Hellenic.”[55]

The theme of the ruler in the cosmic setting was further developed by Lehmann, the excavator of the Sanctuary of the Great Gods at Samothrace, in an essay on “The Dome of Heaven” published in 1945. Lehmann sought to trace “the antique background of the Christian vision of heaven in the dome.” In the process he assembled an impressive corpus of cosmic domes, most of which are attested only by texts. Nero's Golden House is set at the origin of a "tradition" that "combines the cosmic speculation of learned men of philhellenic Roman republican society with the religious-political symbolism of the Roman empire" and continues in Khosrow's throne, among other monuments.[56]

Many links in the chain of monuments constructed by Lehmann are weak, and their cosmic references are often far from clear, as when unassuming fringes are interpreted as cosmic canopies.[57] The evidence for the existence of a "dome of heaven" in Nero's Golden House, a crucial link in Lehmann's argument, is not as substantial as he supposed. It may be traced back to a passage in Suetonius describing a dining hall that was "circular and constantly revolved day and night, like the heavens."[58] There is no evidence that this room bore any sort of astronomical decoration.[59] The value of Lehmann's essay lies rather in his willingness to attribute a range of meanings to cosmic imagery that take spatial context into consideration. In his conclusion, Lehmann offers a typology of "functional environments" (villas, palaces, baths, and tombs) in which such imagery appeared. Villas are centers of "cosmic speculation and fashionable interest," while palaces encouraged the "astral glorification of the emperor." Astronomical imagery in tombs served to glorify the deceased, while baths were "lecture halls" in which astronomical matters were discussed.[60]

It was left to the Norwegian classical archaeologist Hans Peter L'Orange to produce a more comprehensive account of the political functions of cosmological imagery. L'Orange, best known for his work on late antique art and portraiture, held a series of lectures in Oslo in 1946 that were published in 1953 as *Studies on the Iconography of Cosmic Kingship in the Ancient World,* simultaneously the most ambitious and the strangest book of his career.[61] The first six pages take us from Plato's *Laws* to Viking settlements via the round city of Baghdad, leading directly into a chapter on Khosrow's throne, which is approached via Crusader legends of Prester John and the cosmic significance of Babylonian ziggurats. The entire book is constructed out of dizzying chains of monuments and themes, covering an extraordinary temporal and geographical breadth. Indeed, one major effect of L'Orange's book was the creation of a new canon of monuments understood to exemplify the political significance of astronomical imagery. Here, in addition to the Throne of Khosrow and Nero's Golden Hall, we find discussions of the *clipeus* in late antique art and the Byzantine ceremony of raising the emperor on a shield.

In most of L'Orange's interpretations, a given image is understood to make a declaration regarding the nature of a particular ruler or office. Thus, while describing the Byzantine ceremony for the acclamation of a new emperor, L’Orange asserts “the emperor on the shield is the emperor on the world, the cosmocrator.”[62] In other cases, however, the image of the cosmos is understood to represent a relationship between a ruler and a community, as in the urban planning of the ancient Near East: “The king amongst his vassals and satraps was a reflection of the heavenly hierarchy.”[63] L’Orange’s recognition of the ability of visual forms and iconographic complexes to reflect and (less explicitly) to mediate social structures constitutes his first major contribution to the present investigation. Also of note is his sensitivity to the ambivalence of certain types, as when “the king enthroned amongst the spheres becomes a symbol of superhuman arrogance.”[64] L’Orange thus highlights the double-edged nature of the political application of cosmological imagery, its potential to express both splendor and hubris.

The basic argument of this book results from a synthesis of Warburg’s emphasis on the mediating function of images, on the one hand, and L’Orange’s introduction of a political level of interpretation, on the other. In the early Middle Ages, images of the cosmos served to mediate between individuals and political communities. This did not occur in a static fashion. The political function of cosmological images cannot be reduced to that of a declaration, as if an image were used by a ruler to assert, “I’m king of the world.” Instead, mediation by an image between an individual and a community was a dynamic process, in which both meanings and functions were unstable and subject to change from one moment and one viewer to the next. Images could even, to paraphrase Warburg, hold contradictory meanings “within the personalities of individual viewers.” Severus’s palace embodies the full range of possible results of this process: from complete isolation to inclusion in a universal community.

OBJECTS OF STUDY

The differences between the work of Warburg and of L’Orange are not exhausted by the contrast between Warburg’s emphasis on psychology and L’Orange’s focus on politics, but extend to the contexts and media of the objects that the two men chose to study. Although Warburg’s essays on Renaissance astrological imagery engaged intensively with monumental fresco cycles, his medieval exemplars are drawn almost exclusively from manuscript painting. Saxl consolidated the focus on manuscripts in his *Catalog*. L’Orange, on the other hand, was primarily interested in monumental architecture, relief, and court ceremonial.

These choices inflected the accounts of the function of astronomical imagery found in each tradition. While in his later works Warburg focused on the ability of astronomical images to mediate between a subject and the surrounding world, practitioners of the “Warburgian” tradition tended to assume that astronomical images were meant to carry knowledge about the stars. Likewise L’Orange, while he occasionally considered a more abstract function for cosmological imagery as a metaphor for political hierarchies, usually emphasized the use of such images as elements of display, stage props for political theater. We are thus presented with two different “scenes”: the scribe alone at his desk, on the one hand, and the pomp of public spectacle, on the other.

The two traditions of investigation into medieval images of the cosmos are thus separated by distinctions of emphasis, medium, function, and scene. The “Warburgian” strand in the study of images of the cosmos focuses on psychology, book illumination, the transmission of knowledge, and the solitary scribe. The “archaeological” tendency focuses on politics, monumental architecture and ceremonial, display, and the communal spectacle. Moreover, there has been remarkably little exchange between the two traditions. Nowhere in his *Studies* does L’Orange mention Warburg, while recent studies in the Warburgian tradition rarely if ever mention L’Orange.

The separation between the two traditions might seem natural. The connections between solitude and the transmission of knowledge, on the one hand, and community and political display, on the other hand, correspond well to modern images of solitary, socially inept scholars and mass rallies. It is a central hypothesis of this study, however, that these distinctions obscure more than they reveal. The transmission of knowledge is often a political and communal act, while political display may culminate in the solitude of the ruler.

In the following chapters, the involvement of rulers in the production of knowledge will be evoked by the most diverse monuments. We will consider the monumental bath that proclaimed the astronomical knowledge of the Byzantine Emperor (chapter 4), and the Frankish king who sent a silver dish with cosmological decoration as a gift of thanks to the courtier who had instructed him in the basics of astronomy (chapter 2). A full range of positions in relation to astronomical knowledge, from expert to pupil, was available to the early medieval ruler, and those positions were frequently articulated through images.

The production of astronomical knowledge also played a fundamental role in the formation of communities. Were we to maintain the stereotyped image of the monastic scribe who copies an age-old manuscript by candlelight, then these communities might be tenuous, notional, and diachronic: the scholar who discourses with ghosts and dreams of posthumous recognition. However, in the production of Carolingian astronomical manuscripts in the first two decades of the ninth century, we will observe a synchronic collaborative effort distinguished by its speed and breadth. Manuscripts circulated widely and rapidly and were not merely copied but were progressively altered and improved by a socially diverse cast of actors (chapter 3). In such a case it is certainly accurate to speak, as historians have done, of the formation of a “society of knowledge.”[65] Alternately, the distribution of knowledge can be hindered, and efforts to form consensus around an understanding of the physical form of the universe can fail due to social tensions, as occurred in early medieval Byzantium (chapter 4).

Just as the knowledge-bearing function of images of the cosmos can be linked to the formation of communities, so too can their role in political display produce isolation. Ancient political philosophy had a name for the figure who, in ruling all, becomes completely alone: the tyrant, who, in Plato’s formulation, “never has a taste of freedom or true friendship.”[66] The artistic correlate of this position is the visual exaltation of the ruler as the cosmocrator, his isolation as a single figure and the reduction of his subjects to “an unmarked *demos*.”[67] The isolation of the ruler as a figure of another order was evoked through explicitly cosmological imagery by the figure of Khosrow’s throne. This isolation was fundamentally ambivalent. It could, on the one hand, be perceived positively, as an image of splendor and majesty. On the other hand, it could be perceived as the ultimate expression of tyranny, of the self-delusion of the unjust ruler (chapter 1).

This book is not structured chronologically. Instead, it proceeds from solitude to community before ultimately confronting the limits of the latter. In the first two chapters, objects from various times and places are juxtaposed to illuminate a central theme. The first chapter analyzes the relationship between splendor and tyranny through literary representations of the Throne of Khosrow in Persian, Latin, Greek, and Arabic sources. It then moves to a consideration of two early medieval monuments— the Carolingian “Cathedra Petri” and the Umayyad Mosque of Damascus— that attempted to retain cosmic splendor while avoiding the charge of tyranny. The second chapter addresses monuments that have been treated, like the Throne of Khosrow, as declarations of world rule on the part of a single ruler but are better understood as agents that forged connections between royal and non-royal elites. Of the three monuments at the center of this discussion, two are preserved (the so-called “Star Mantle of Henry II” in Bamberg and the cupola paintings of Qusayr ʿAmra in present-day Jordan) and one is known only through texts (a silver table owned by three generations of Carolingian rulers).

The third and fourth chapters focus on the production of cosmological imagery in the Frankish and Byzantine states, respectively. Both are primarily concerned with manuscripts. The third chapter develops a theme from the concerned with manuscripts. The third chapter develops a theme from the second, namely the ability of cosmological images to actively forge relationships between elite groups in the Carolingian Empire. It tells the story of the intensive production of manuscripts containing cosmo logical images in the years between 800 and 820, a process that included monastic, ecclesiastical, aristocratic, and courtly milieux. If the Carolingian case illustrates the generation of cosmological consensus, the fourth chapter examines the emergence of cosmological dissensus in Byzantium. Whereas for Carolingian elites a shared image of the cosmos formed a basis for group identity, early medieval Byzantium was marked both by the cultivation of ancient astronomical knowledge at court and elite advocacy of a radically opposed, non-spherical image of the cosmos.

The conclusion, finally, returns to the questions first raised in this introduction. Even if from our point of view the Frankish, Byzantine, and Islamic states produced markedly similar cosmological images in the early Middle Ages, each state developed a distinct approach to this imagery. The figure of Khosrow’s throne became a powerful negative exemplum in the western and Islamic traditions but was tempered in Byzantium. Similarly, variations on a literal, “scientific” image of the cosmos became powerful metaphors for political community in the western and Islamic traditions but not in Byzantium. Finally, an image of the cosmos became part of a widely shared visual culture in the western and Islamic traditions, while Byzantium developed instead the figure of an exclusive imperial knowledge, which rival elites sought to undermine. It is as if the dynamic expressed in the story of Severus’s throne rooms had split in two, with the image of the cosmos that constitutes a community maintained in the western and Islamic traditions, and the solitude of the emperor who knows maintained in the Byzantine.

1 Tyranny and Splendor

> The host of heaven, planets, Zodiac,
> The bright moon in whatever Sign soe'er,
> And all the bodies, fixed or wandering,
> Were visible to the astronomer,
> Who saw what portion of dark night had passed,
> And how much sky had moved athwart the earth.[1]

Thus, shortly after the year 1000, did Abu'l-Qasem Ferdowsi imagine the celestial decoration of a throne commissioned by the Sasanian shah of shahs Khosrow, second of his name (591–628).[2] Ferdowsi wrote in Tus, a city in eastern Iran that had recently come under the rule of Sultan Mahmud of Ghazna, among the first of many rulers who would establish de facto independent states at the margins of the Dar al-Islam while formally acknowledging the sovereignty of the caliphs in Baghdad. Ferdowsi was therefore witness to the erosion of the early medieval world order, while in the conclusion of his *Shahnama*, or "Book of Kings," he narrated the collapse of the late antique world order. At the center of this story stood the figure of Khosrow II, the shah who "having once been just, became unjust."[3]

Ferdowsi's ambivalent image of Khosrow is split between admiration for a royal splendor rooted in ancient Iranian traditions and revulsion at the tyrannous appetite that destroyed the Sasanian monarchy. This ambivalence is encapsulated in his description of the "Taqdis throne," (or "throne like an arch"), to which the poet devoted over 150 lines of the *Shahnama*.[4] Nor was Ferdowsi the only author of his time to be fascinated by the throne of Khosrow. His near contemporary al-Thaʿalibi, who wrote a treatise on Iranian history in Arabic prose, described the Taqdis throne at length, as did the Samanid vizier Balʿami in his Persian prose history, albeit far more briefly.[5]

As a central element of a cultural imaginary, conjured by those litterateurs who, around the year 1000, looked back at the origins of the medieval world, the Taqdis throne retrospectively spans the early Middle Ages. Moreover, it is closely mirrored by another image of the cosmic hubris of Khosrow, which appears in accounts by Christian authors of the war between the Sasanian shah and the Roman emperor Herakleios. Nikephoros, Patriarch of Constantinople, who wrote his *Short History* toward the end of the eighth century, described an image in a temple that showed Khosrow enthroned and surrounded by the stars, the sun, and the moon.[6] In the anonymous Latin *Reversio sanctae crucis*, a much-copied liturgical text of the early eighth century, the temple houses a golden throne crowned by the sun's chariot and images of the moon and stars.[7] Literary accounts of the cosmic thrones of Khosrow are scattered throughout the early medieval world, from Frankish lands through Byzantium up to the eastern fringe of the caliphate. If the image of the cosmos was a shared element of early medieval artistic production in Europe and the Middle East, then Khosrow's thrones tracked it like shadow doubles, figures of that iconography bent to a tyrant's will.

Hans Peter L'Orange recognized the importance of Khosrow's throne for understanding the changing function of the cosmic image, interpreting it as a symptom of the Christianization of the post-Roman world. The sources' hostility to Khosrow, whom L'Orange compared to Lucifer, signaled that Christ had assumed the cosmic throne once occupied by mundane kings. "Only as the earthly representative of Christ" could Christian kings "share in these formulae of cosmocratic power. . . . The astral hall in the service of man is a profanation of the Christian cosmos and its creator."[8] Indeed, many Christian authors framed their disapproval of Khosrow's cosmocratic pretensions in religious terms, but as we shall see, Muslim writers made similar use of the figure of Khosrow's throne. Suspicion of claims to universal rule transcended religious differences and responded to the new political configuration of the early medieval world. It therefore posed a common challenge to rulers and their advisers: how to preserve the splendor of ancient kings without replicating the tyranny of Khosrow?[9]

The concluding sections of this chapter examine two different responses to this challenge, one from the first century of the Islamic empire, the other from the first century of the Frankish. The Great Mosque of Damascus presents a space within which "the iconography of universal monarchy" was balanced by explicit acknowledgment of its limits.[10] The minbar from which successive Umayyad caliphs addressed their subjects was surrounded by both mosaics that stood for the territorial expanse of the new state and by Qur'anic inscriptions that asserted God's ultimate sovereignty over heaven and earth alike, and the finitude of the physical world. The Cathedra Petri is an enigmatic object of Carolingian manufacture, today housed in St. Peter's in Rome, that resembles the Latin descriptions of the Throne of Khosrow. Its original function remains a matter of speculation, and its decoration has been interpreted in radically divergent fashions: as a straightforward declaration of cosmocracy, on the one hand, and as a warning against imperial hubris, on the other. While the cathedra's resemblance to the Throne of Khosrow provides additional support for the latter account, its ultimate interpretation as the Throne of St. Peter suggests a third option, in which the universal ambition expressed by the throne belongs not to the Frankish state but to the papacy.

THE THRONES OF KHOSROW

For today's historians of late antiquity, Khosrow II remains a pivotal figure. His image has become no less ambivalent in the millennium that separates us from Ferdowsi, even if his name has become less familiar. When Khosrow's father, Shah Hormozd IV, was dethroned by one of his generals, Bahram Chobin, Khosrow fled west and enlisted the help of the Roman emperor Maurice to restore him to the throne that his ancestors had held for centuries. Maurice supplied troops, and within a year Khosrow had retaken the imperial capital, Ctesiphon. The first decade of his reign was peaceful, but when Maurice was killed by the usurper Phokas in 602, Khosrow launched an assault on Rome in the name of Maurice's son, which continued when Phokas was dethroned in turn by Herakleios.[11]

In earlier centuries, the western campaigns of the Sasanians merely ensured regular payment of the tribute that allowed Iran to represent Rome as its natural subordinate. Khosrow's early successes, especially the conquest of Palestine and Egypt, encouraged him to seek instead the total destruction of the Roman state. By 628, however, the tide had shifted and the Roman army was camped outside Ctesiphon. The failure of Khosrow's universal ambitions led to his death in a palace coup, a loss of aristocratic confidence in the Sasanian monarchy, and the eventual collapse of the state. In the 630s and 640s the Arab armies absorbed the former Sasanian empire into the new Islamic caliphate with relative ease.[12]

On the Roman side, the war with Persia assumed a religious aspect, especially after the Iranian army removed portions of the True Cross from Jerusalem.[13] For the first time in two centuries, the Roman emperor personally led his troops against a foreign enemy. Herakleios's court poet, George of Pisidia, compared the emperor with the Good Shepherd, Moses, Elijah, and Noah, and represented his victory as "a new Creation analogous to God's creation of light out of darkness."[14] In 628 the news was broadcast from the ambo of Hagia Sophia: "Fallen is the arrogant Chosroes [Khosrow], opponent of God. He is fallen and cast down to the depths of the earth; he who was exalted and spoke injustice in arrogance and contempt against our Lord Jesus Christ the true God and his undefiled Mother."[15] The Roman victory shaped Christian ideas of "holy war," serving as a model through which later conflicts with Muslim armies were viewed.[16] If Khosrow's defeat hastened the end of the Sasanian dynasty, the memory of Herakleios's victory helped Rome to withstand the Arab attacks and contributed to the survival of the state, albeit in the vastly reduced form that we call Byzantium.

Already for medieval historians, Khosrow's reign marked the collapse of one world order and the emergence of another. In his *History of Messengers, Kings, and Caliphs,* al-Tabari (839–923) remembered Khosrow as a contemporary of the Prophet. God revealed to Muhammad his sacred mission in the twentieth year of Khosrow's reign, and the *hijra* to Medina occurred in its thirty-third year, which thus became year zero of the Islamic calendar.[17] Muhammad's calling produced a literal crack in the edifice of Khosrow's power: "When God sent his prophet Muhammad, Kisra [Khosrow] woke up . . . and found that the arched roof of his royal palace had collapsed in the middle without any weight having been put upon it."[18] Al-Tabari also relays the widespread opinion that Surat al-Rum (Qur'an 30, 1–5) had both described the defeat of the Roman army by Khosrow's forces and prophesied the eventual victory of the Romans: for "the Prophet disliked the Magi gentiles gaining the upper hand over the Roman people of the book."[19]

Christian historians of the early Middle Ages expressed their hostility toward Khosrow in explicitly cosmological terms. The Armenian tradition remembers him as "the Sasanian brigand, who consumed all the interior with fire, disturbing the sea and the dry land, to bring destruction on the whole earth . . . the destructive and ruinous Khosrow, cursed by God."[20] For Theophylaktos Simokattes, who wrote his history at the court of Herakleios, Khosrow "exploited the tyranny [of Phokas] as a pretext for war, and mobilized that world-destroying trumpet: for this became the undoing of the prosperity of both the Romans and the Persians."[21] For the Greek monk Theophanes, writing in the first decades of the ninth century, Khosrow was simply *kosmolethron,* the world-destroyer.[22]

In multiple historical traditions, censure of Khosrow drew on sources deeper than mere chauvinism. Khosrow was the man whose desire to destroy Rome wrecked the delicate balance of power that had prevailed since the third century. In a gesture full of irony, Theophylaktos placed a defense of this balance in the mouth of Khosrow's own ambassador: "It is impossible for a single monarchy to embrace the innumerable cares of the organization of the universe. . . . For it is never possible for the earth to resemble the unity of the divine and primary rule, and to obtain a disposition corresponding to that of the upper order."[23] This principle is distilled in the famous metaphor that Theophylaktos presented as a quote from a petition sent to Maurice by Khosrow himself: "God effected that the whole world should be illumined from the very beginning by two eyes, namely by the most powerful kingdom of the Romans and by the most prudent scepter of the Persian state."[24] By seeking the destruction of Rome, Khosrow had presumed to establish divine unity on earth. The early medieval descriptions of Khosrow's cosmic thrones are inextricably connected to the image of Khosrow as the ruler whose excessive ambition produced a catastrophic rupture in the late antique world order.

Many scholars have written about the "Throne of Khosrow," as if a single object, whether mythical or real, had produced all the later stories.[25] In fact, the extant descriptions of Khosrow's thrones represent two traditions, which are distinguished by the name, architectural context, and character of the throne.[26] The first tradition, which may ultimately derive from Sasanian sources, is represented by Ferdowsi, al-Thaʿalibi, and Balʿami, who all emphasize the superhuman scale and material splendor of a monument that they call the "Taqdis throne" and place in an urban-palatial setting. The second tradition, which may derive from firsthand accounts of Herakleios's Persian campaign, is represented by Nikephoros and the *Reversio sanctae crucis.* The *Reversio* describes an actual throne while Nikephoros describes only an image, but both situate the monument in a temple and pair it with a mechanism that artificially produces thunder and rain. Despite these differences, the throne serves in both traditions to epitomize the shah's hubris.

The first tradition, including the very brief notice in Balʿami, is distinguished by three shared elements. The first is the name "Taqdis." Second is a set of extravagant measurements. While the individual sources provide different numbers, all attribute to the throne a height of a hundred cubits or more, that is, at least 165 feet (50 m).[27] They thus depict an overwhelming structure that far exceeded the human scale of a normal throne. The third shared element is an account of the throne's material splendor, including references to gold and rubies. Ferdowsi and al-Thaʿalibi take full advantage of the opportunity to catalog the trappings of a fantastically wealthy sovereign, naming turquoise inlays, a frame of ivory and teak, nails and clamps of solid silver, a dome of gold and lapis, a winter canopy of beaver skins and sables, gem-encrusted steps of gold, seats of lapis, turquoise, ebony and gold, and fabric of golden thread hung with jewels.

These shared elements must reflect a common tradition. Ferdowsi, Balʿami, and alThaʿalibi drew on multiple and varied sources, many of which ultimately relied on now-lost Sasanian-era texts in Middle Persian.[28] The tradition may have been amplified both through authorial invention and through "horizontal transmission," in which scribes supplemented their texts by reference to other medieval works.[29] There is thus little sense in speculating about the appearance of the "actual" throne, if indeed it ever existed. But it is likely that multiple late Sasanian and early Islamic accounts of Khosrow's throne were known to early medieval authors in New Persian and Arabic.[30]

The throne's cosmic decoration is essential to the accounts of Ferdowsi and al-Thaʿalibi. Ferdowsi locates depictions of the zodiac, the planets, the moon, and the fixed stars on the throne proper, and describes a textile, fifty-seven cubits long, decorated with a "map of heaven," including the seven planets and the seven climes.[31] Al-Thaʿalibi locates the cosmic decoration in a *taq* (an arch or a vault) of gold and lapis lazuli that was set above the throne proper. This bore depictions of the sky and the stars, the signs of the zodiac, and the seven climes.[32]

Neither author specifies a geographic location for the throne. Ferdowsi merely states that it was in a hippodrome. Al-Thaʿalibi sets his account of the throne between descriptions of the "Iwan Kisra," the Arabic name for the vaulted Sasanian palace of Ctesiphon, whose remains stand on the east bank of the Tigris (fig. 5), and Khosrow's crown, which was suspended by a chain from the palace vault so that its weight would not encumber the shah's head. For both, the throne forms part of the ceremonial furniture of an urban palatial complex, which for medieval readers would have evoked the ruins across the river from Baghdad.[33]

The Taqdis throne was Khosrow's alone, not a generic "throne of the Sasanian shahs." For al-Thaʿalibi it was one of the unique marvels in Khosrow's possession. In addition to palace, throne, and crown, these included his wife Shirin ("the garden of beauty"), and his white elephant, which was two cubits taller than all his other elephants, and "excited the admiration and fixed the stares of all."[34] Ferdowsi's description of the throne is set within an elaborate framing narrative. Khosrow's vizier describes the throne of the legendary Kayanian shahs, to which each made a lavish addition. Representations of the planets were the contribution of Jamasp, the vizier to shah Goshtasp, who added them "as a key wherewith to open wisdom's door . . . the heavenly host, which hold the secrets of futurity." This throne was destroyed "through ignorance and at one fell swoop" during Alexander's conquest of Iran.[35] Khosrow orders its reconstruction, a task for which craftsmen from proverbial Rome to proverbial China are summoned.

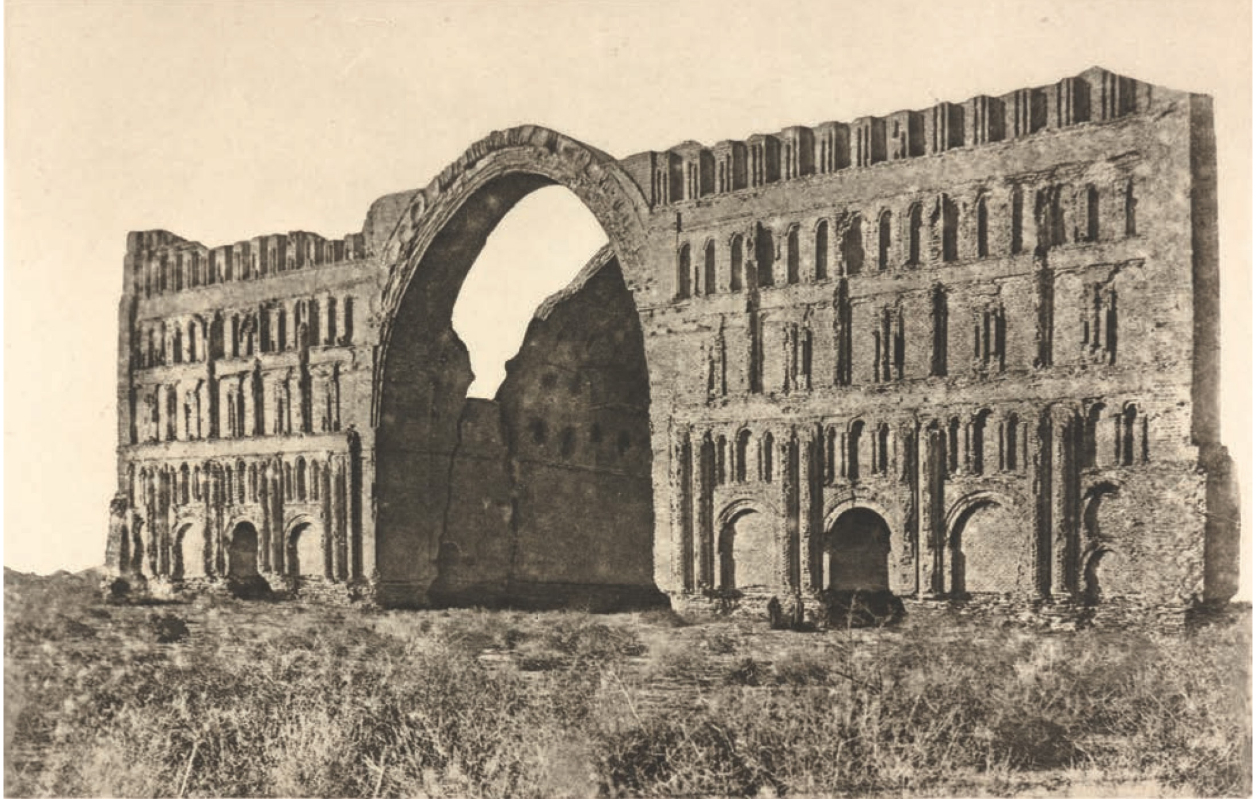


FIGURE 5
Iwan Kisra. In Marcel Dieulafoy, *L'art antique de la Perse* (Paris: Librairie centrale d'architecture, 1889), pl. III.

Thus the cosmic decoration of the Taqdis throne was not a straightforward translation of the universalist claims of Sasanian ideology, but a unique element of an object that is firmly rooted in the context of Khosrow's reign. The description of the throne occupies the same relative location in the works of Ferdowsi and al-Thaʿalibi. The young shah's sole concern was the defeat of the usurper Bahram Chobin, after which he became "a new man, freed from worry"; "from that time forth the Shah sat undisturbed."[36] The account of the Taqdis throne and the other marvels in Khosrow's possession appears after this moment of triumph. It is followed by his downfall at the hands of his nobles, which both authors attribute to his greed. For Ferdowsi, "the shah, who had been just, became unjust . . . the ram grew like a tyrannous wolf . . . his one desire to increase his hoards."[37] Al-Thaʿalibi concludes his account by delivering captive Khosrow to his enemies, mounted on his white elephant.[38]

Since Ferdowsi and al-Thaʿalibi all but ignore the war between Rome and

Iran, the cosmic throne stands as their sole allusion to Khosrow’s self-destructive and world-destroying ambition. For Ferdowsi, it is both the summation and the end of the history of pre-Islamic Iran. Both authors set a mimetic trap for their readers, who are first enchanted by the shah’s splendor, before witnessing his descent into avarice and tyranny. The Taqdis throne is an intentionally seductive negative exemplum of the pretense of a single man to rule the entire world.

The second major tradition regarding Khosrow’s thrones presents significant differences in the details alongside a general similarity of purpose to the first. The Greek sources, beginning with the eighth-century account of Nikephoros, do not describe an actual throne, but an image of Khosrow enthroned among the stars.[39] The earliest preserved Latin account, the eighth-century *Reversio sanctae crucis*, does describe a throne, and it inspired a number of later accounts both in Latin and in various European vernaculars.[40]

The accounts of Nikephoros and the *Reversio* share three elements. First, both appear in a narrative of Herakleios’s campaign in Persian territory. Nikephoros writes that Herakleios “invaded Persia and set about destroying cities and overturning the fire temples,” discovering the cosmic image of Khosrow in the process.[41] In the *Reversio*, Herakleios finds the shah himself seated on his golden throne. When Khosrow refuses to convert to Christianity, Herakleios draws his sword and cuts off his head.[42] Second, both accounts locate the cosmic image in a temple.[43] Finally, both accounts describe a mechanism for producing artificial rain and thunder as part of the throne. These similarities suggest that the Greek and Latin traditions share a common source.

This source is not directly related to the first tradition, which makes no mention of Herakleios, situates the throne in a palace or a hippodrome, and does not describe a mechanism for producing rain and thunder; just as the second tradition neither knows the name “Taqdis” nor transmits the throne’s dimensions. Nikephoros’s primary source for events before 641 was a chronicle composed in Constanti nople in the 640s.[44] The *Reversio*’s sources for Herakleios’s campaign have not been identified.[45] However, the missive read in Hagia Sophia in 628 to announce Khosrow’s defeat mentions an earlier letter from the Iranian front that described “how the God-abhorred and execrated Chosroes fled our presence, from Dastagard to Ctesiphon, how his palaces, along with many provinces of the Persian state were destroyed.”[46] This lost account may be the ultimate source of the second tradition.

Despite the differences between the two traditions, they share the intimate association between Khosrow and a monumental image of the cosmos. Nikephoros describes an image on the ceiling of the temple that depicts Khosrow enthroned and surrounded by stars, the sun, and the moon. The *Reversio* describes “a golden throne set with glimmering gems” which was decorated with “a chariot of the sun and the likeness of moon and stars.”[47] However, whereas the throne’s association with tyranny is gradually revealed in the first tradition, Nikephoros and the *Reversio* explicitly denounce the hubris of the earthly ruler who would frame himself with the image of heaven. Nikephoros begins his description of the image by stating that Khosrow had “made himself into a god.”[48] In the *Reversio,* the accusation of hubris is immediately tied to the assertion that Khosrow had set the True Cross next to his throne “as if he were a colleague of God” (quasi collega Deo), but it retrospectively colors the throne’s cosmic decoration.[49]

This image of universal rule is destroyed by Herakleios, who thus provides a model of just rule as a pendant to the tyrannical Khosrow. According to Nikephoros, “upon seeing this abomination, Herakleios threw it down and ground it into dust.”[50] In the *Reversio,* Herakleios strips the temple of its gold and gems and uses them to restore the churches that Khosrow had destroyed. He then returns the True Cross to Jerusalem in demonstrative humility, “having removed the tokens of imperial rank . . . without shoes, girded only with a linen belt . . . his face covered in tears.”[51] As in the first tradition, the account of Khosrow’s throne is not a generic reminiscence of the Sasanians, but a relic of the Roman-Persian war, which is here directly invoked, and the opponents depicted in starkly dualistic fashion.

Actual monuments may stand at the origin of both traditions: a throne room behind the first, and a temple behind the second. If this were the case, then the reign of Khosrow II was marked by multiple explicit and monumental visual renditions of the claims to universal empire that had long been embedded in ancient panegyric and titulature, both in Rome and in Iran.[52] However, neither tradition represents these monuments as familiar or commonplace. Instead, both depict Khosrow’s cosmic thrones as extraordinary gestures, both in their splendor and in their excessive ambition. The thrones of Khosrow were not then, nor are they now, straightforward distillations of an “oriental” theory of universal kingship.[53] They rather served Muslims and Christians alike as spectacular negative exempla, and posed an implicit challenge to the rulers of the new early medieval states: was it possible to preserve the splendor of the ancients without replicating the tyranny of Khosrow?

THE GREAT MOSQUE OF DAMASCUS

ʿUmar said, “O Messenger of God, may God make me thy ransom! You

> sit upon a couch woven out of palm fibers, while Kisra b. Hurmuz [Khosrow II] sits upon a throne of gold covered with brocade." The Messenger of God replied, "Are you not content for them to have this world while we have the next?" "May God make me thy ransom," said ʿUmar, "I am content."[54]

According to this tradition preserved in al-Tabari's *History*, when the Prophet Muhammad decided to spread his revelation beyond Arabia, he composed a letter to Khosrow that was delivered by his companion ʿUmar ibn al-Khattab. Khosrow arrogantly dismissed the message, and ʿUmar returned troubled by the discrepancy between the shah's splendid throne and the Prophet's humble mat. Muhammad responded with a challenge familiar from the early years of many religious communities: why seek riches, when the rewards of paradise await? The same disdain for material wealth surfaces in an early tradition regarding the mosque in Medina. Muhammad rejected the plans prepared by two companions, saying: "No, a booth like the booth of Moses— reeds of grass and wood, because the affair [i.e., the end of the world] will happen sooner than that."[55] These two traditions exemplify one response to a central challenge in the self-definition of the young Islamic state. Disdain for precious materials could, as in the story of ʿUmar's trip to Iran, imply rejection of the ancient style of rule. One widely disseminated saying attributed to Muhammad either warned of the imminent apocalypse or announced a new style of rule: "If Kisra perishes, there will be no Kisra after him. And if Qaysar ["Caesar," the Roman emperor] perishes, there will be no Qaysar after him."[56]

Indeed, nine years after the death of Khosrow II, an Arab army led by the general Saʿd ibn Abi Waqqas took Ctesiphon. The last Sasanians fled east, but two mules were seized, and the imperial crown was discovered in their baggage.[57] It was shipped to ʿUmar ibn al-Khattab, who now sat as caliph in Medina, and displayed to the public, just as decades later a Sasanian crown was exhibited in Jerusalem, hanging between the dome and the rock in the Dome of the Rock.[58] The new rulers of Iran did not set the Sasanian crown on their own heads, but displayed it like a trophy. A similar tale is told of an enormous carpet woven from silk and gold with scenes of spring, which was discovered in the Sasanian treasury. This too was sent to ʿUmar, who had it cut into pieces and divided among his soldiers.[59] The ʿUmar of the traditions learned his lesson from the Muhammad of the traditions and rejected the material splendor of Kisra.

Al-Tabari records that the general Saʿd set up a minbar in the Iwan Kisra (see fig. 5), the vaulted hall in which al-Thaʿalibi situated the Taqdis throne, from which the general led his troops in prayer.[60] For the traditionists, the first minbar in Islam consisted of two steps and a seat, carved from wood, whence the Prophet delivered the *khutba* (sermon) to his community in Medina. It resembled, but was emphatically not, a throne, for which Arabic supplies other words (ʿ*arsh*, *kursi*, and the Persian-derived *takht*). Indeed, readers of al-Tabari will have drawn a contrast between the throne of Kisra and the minbar of Saʿd. Muʿawiya ibn Abi Sufyan (661–680), the fifth caliph and the founder of the Umayyad dynasty, was said to have added six steps to the Prophet's minbar, after which he unsuccessfully attempted to transfer it to Damascus.[61] Other traditions associate Muʿawiya with further innovations: setting up a *maqsura* (enclosure), around the mihrab and minbar; sitting on the minbar between the two parts of the khutba; and using the minbar to hear petitions from subjects.[62] Taken together, these traditions attribute to Muʿawiya the conversion of the minbar into a de facto throne.[63] A Syriac historian of the seventh century noted that "Muʿawiya did not wear a crown like other kings"; his throne (*kursis*), on the other hand, could be confidently located in Damascus.[64]

For later authors, Muʿawiya was both the first of the Umayyad dynasty and the first "imperial" caliph.[65] ʿUmar was said to have called him the "Kisra of the Arabs."[66] Muʿawiya was especially blamed for introducing hereditary rule, or kingship in the manner of Kisra and Qaysar.[67] Thus the figure of Muʿawiya provided a pendant to the figure of Muhammad, representing the end of early Islamic purity and the emergence of a state like the kingdoms of old. The full constellation of Umayyad trappings resulted in *mulk* (sovereignty or kingship) or, more severely, *jawr* (tyranny).[68]

No monument better exemplifies the Umayyad effort to project splendor without lapsing into tyranny than the Great Mosque of Damascus. Umayyad rule was always peripatetic, and Damascus never became a permanent caliphal residence.[69] Nevertheless, beginning with Muʿawiya, the Umayyads invested substantial energy and money to transform this ancient metropolis into the symbolic center of their power.[70] Muʿawiya was particularly associated with the palace known as al-Khadraʾ ("the green"), which was built south of the massive temenos of the former Temple of Jupiter whose interior was shared by a Christian church and a makeshift mosque.[71] Even if Muʿawiya's style of rule was too imperial for some, one tradition relates that his palace failed to impress the Byzantines, whose ambassador scorned its brick and timber construction: "The ceiling will do for birds, and the walls will do for rats."[72]

Thus when, at the beginning of the eighth century, the caliph al-Walid ibn ʿAbd al-Malik (705–715) ordered the destruction of the church and the construction of a new mosque, he was surely moved in part by a desire for a monument befitting a world-conquering empire. Another factor was the history of the site in the preceding decades, when it had become a symbol of disunity within the young state. Under Muʿawiya's son and successor Yazid (680–683), the complex hosted the delivery and public display of the head of Husayn ibn ʿAli, killed at the Battle of Karbala in 680. For ʿAlid partisans, the site thus became a memorial to the martyrdom of the third imam and a monument to Umayyad tyranny.[73] Furthermore, during the civil war between the Umayyads and the partisans of Ibn al-Zubayr, the temenos witnessed the public conflict known (after its eastern gate) as the Days of Jayrun. In 684, the Umayyad faithful demanded that the governor of Damascus denounce Ibn al-Zubayr. He refused, and on the following day mounted the minbar to disparage the memory of Yazid instead. An Umayyad partisan struck him with a staff, and the enclosure erupted in violence.[74]

With these memories still fresh, al-Walid's construction of a new mosque could be seen as a unifying gesture, which is indeed how the poet Farazdaq represented it.[75] His panegyric begins with a reference to the touchstone of Umayyad legitimacy, the murder of caliph ʿUthman (644–655). Al-Walid, Farazdaq continues, has separated the impious from the Muslims: before, all met in the same place, and while the Muslims prayed toward God, the Christians prayed toward idols. How can the sound of the bell mix with the recitation of the Qurʾan? It was divine inspiration that caused al-Walid to tear down the church, the same inspiration that was granted to David and to Solomon in the case of the herds (a reference to Qurʾan 21, 78–79). The poem concludes with further praise of al-Walid, a valiant fighter when slaying his enemies, whose generosity feeds the hungry.

In a maneuver common in Umayyad panegyric, the poem moves from "the disintegration of the polity" to "victory and restoration," from the murder of ʿUthman to the image of an Islamic community united under a leader of Solomonic wisdom.[76] Al-Walid's destruction of the church was an exceptional act in an era when congregational mosques were usually constructed next to cathedrals, and it provoked a variety of defensive explanations by later Muslim authors.[77] Farazdaq produces a correspondingly drastic portrait of the Christians, comparing them with the murderers of ʿUthman and accusing them of idolatry. The division of the temenos between Christians and Muslims seems to stand in for the communal traumas of Karbala and the Days of Jayrun, still too raw to be named explicitly.

Like Farazdaq's poem, the structure and decoration of the Great Mosque present an image of a Muslim state united under the guidance of a Solomonic ruler. Al-Walid’s mosque still stands, many times renovated and restored, a stubborn survivor of successive fires. Reconstruction of its layout and appearance in the Umayyad period requires comparison of the surviving fabric (fig. 6) with the dossier of descriptions and chance references by medieval and early modern authors. From this process emerges a hypothetical Umayyad-era layout, including the entrances and the divisions of the interior, and the decoration of the qibla wall, which marked the direction of prayer, and before which multiple Umayyad caliphs mounted the minbar and delivered the khutba (fig. 7).[78]

Al-Walid’s mosque remains within the old temenos, largely preserving its exterior walls and dividing the interior in two (see fig. 6). The northern half is occupied by an open courtyard, surrounded on the west, north, and east by porticos. Three primary gates provide access from the outside: the Bab al-Barid to the west (fig. 6, A), the Bab al-Faradis to the north (fig. 6, B), and the Bab Jayrun to the east (fig. 6, C). The southern half is occupied by a closed sanctuary, whose primary entrance leads from the courtyard into the so-called transept. This central axis is divided into three bays, of which the central is domed, and culminates in a mihrab marking qibla on its southern wall (fig. 6, F).[79] From the three bays aisles extend, separated from each other by colonnades. The southeastern aisle contains the “Mihrab of the Companions” (fig. 6, G) traditionally attributed to Khalid ibn al-Walid, conqueror of Damascus and a companion of the Prophet.

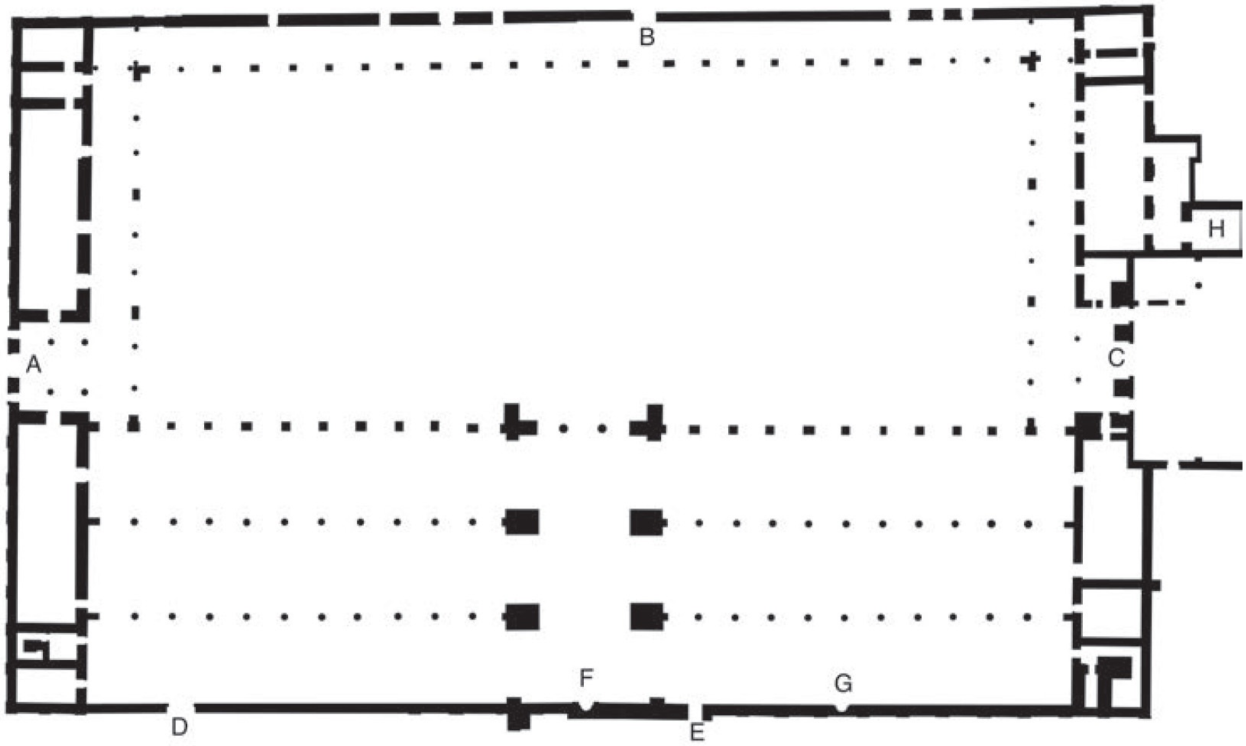


FIGURE 6
Damascus, Umayyad Mosque, schematic ground plan with locations referred to in the text.

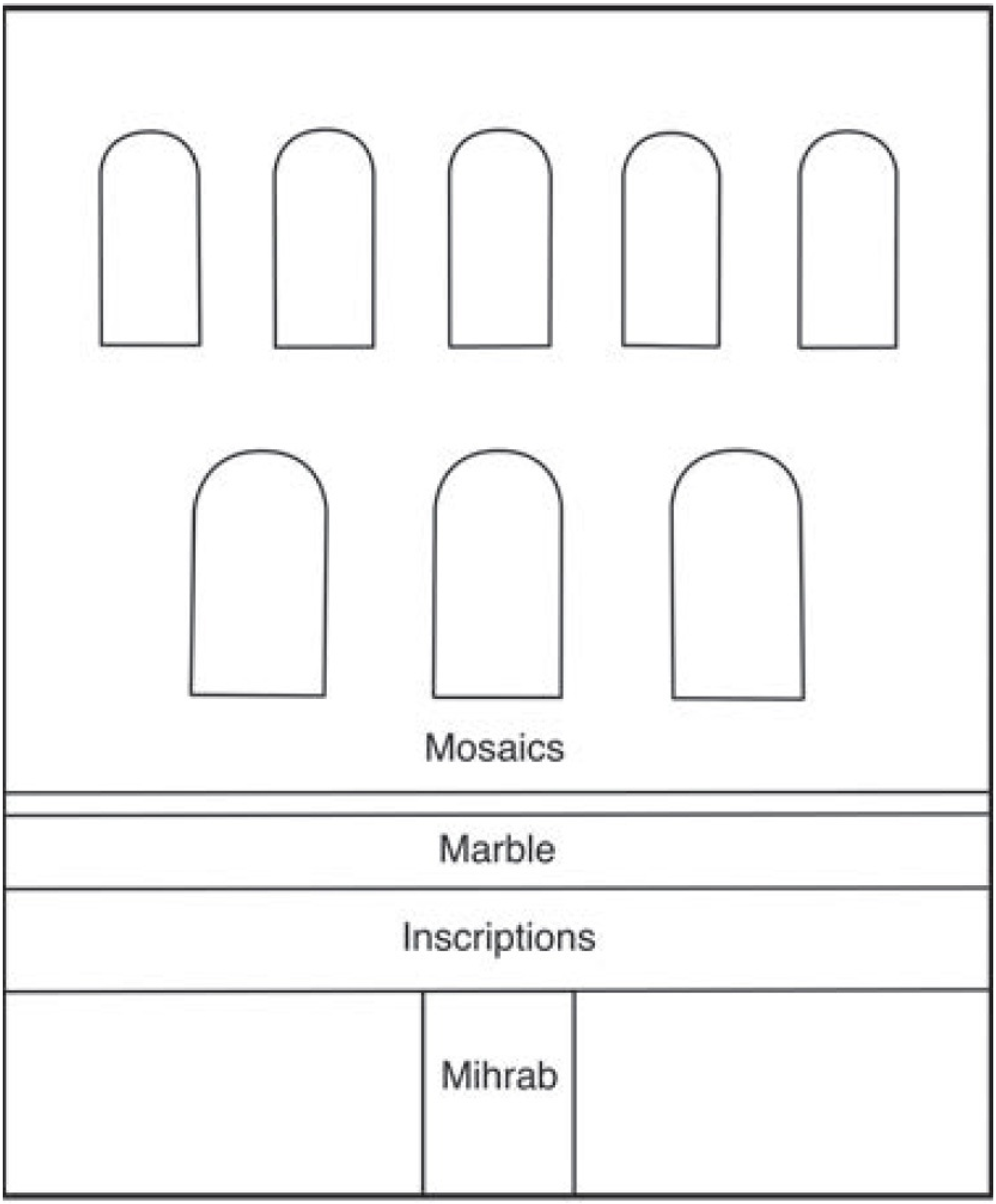


FIGURE 7
Damascus, Umayyad Mosque, schematic elevation of interior south wall around central mihrab.

The medieval sources distinguish two doors in the qibla wall that led south to the palace. Finbarr Barry Flood has shown that the eighth-century Bab al-Saʿa was located at the western end of the qibla wall, just west of the present-day Bab al-Ziyada (fig. 6, D).[80] The Bab al-Khadraʾ, whose name indicates its close association with the palace, probably corresponds to the east door of the triple gate of the Roman temenos (fig. 6, E), which is still visible on the exterior (fig. 8).[81] It thus stood just to the east of the central mihrab. This arrangement is replicated on the qibla wall of the Great Mosque of Rusafa, attributed to the patronage of the caliph Hisham (724–743), which also displays two mihrabs, one at center and another to the east, and a doorway just east of the central mihrab.[82]

The interior of the eighth-century sanctuary was articulated by at least two maqsuras, which the medieval sources distinguish as the "maqsura of the Companions" and the "new maqsura." In the twelfth century, when the traveler Ibn Jubayr visited Damascus, the maqsura of the Companions enclosed the like-named mihrab of the Companions, and was remembered as "the first maqsura ever built in Islam." The "new maqsura," constructed with al-Walid's mosque, housed the minbar for the khutba and a mihrab for public prayers.[83] This probably reflects the eighth-century arrangement: the maqsura of the Companions was retained for its historical significance, while the "new maqsura" was the site of the minbar and the focus of communal prayer.[84] Here too, the Great Mosque of Rusafa, where the anchors for the earliest minbar are preserved just west of the central mihrab, provides a parallel.[85]

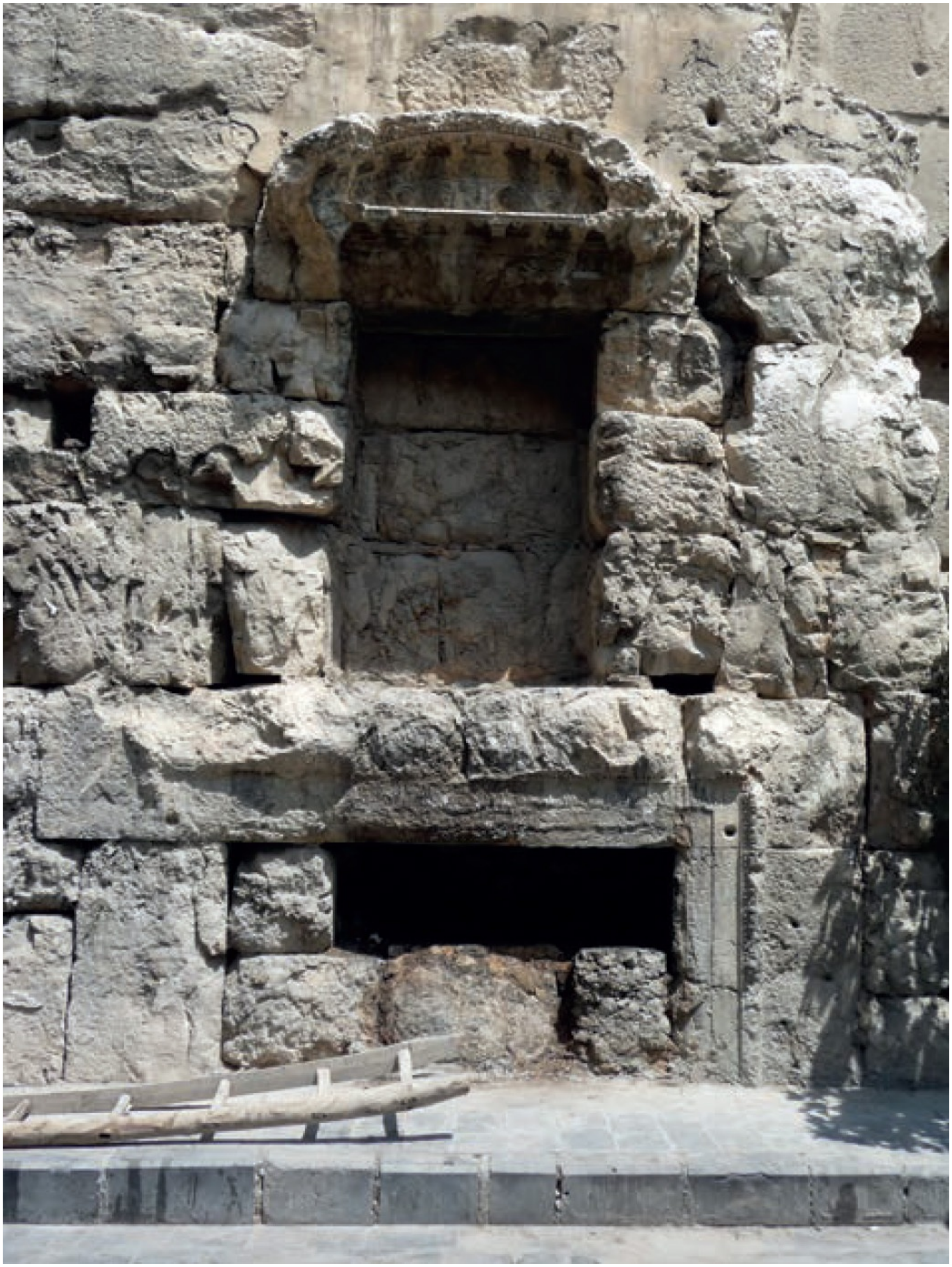


FIGURE 8

Damascus, Umayyad Mosque, south wall, exterior (eastern entry of Roman-era triple gate).

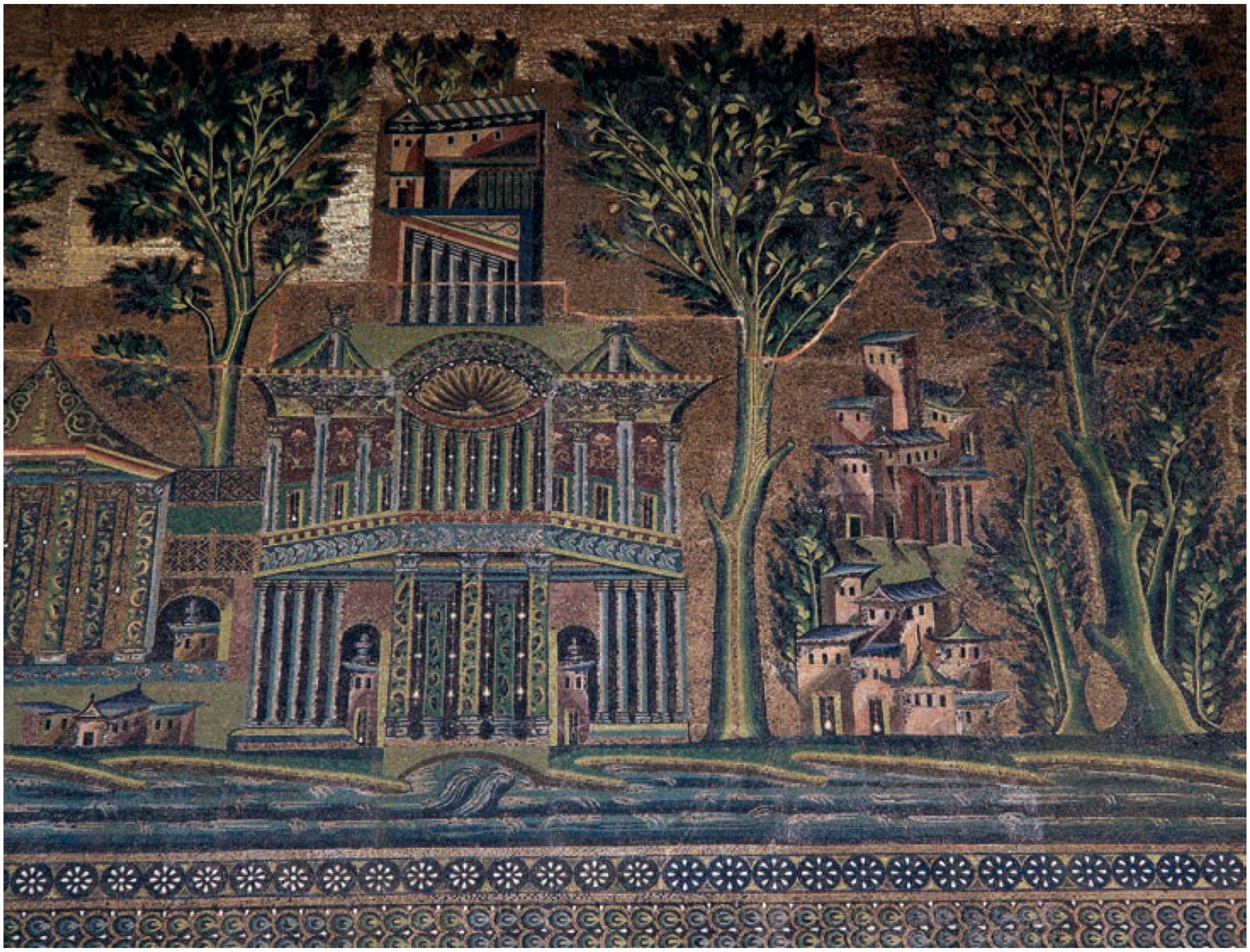


FIGURE 9
Damascus, Umayyad Mosque, courtyard, west portico, mosaics.

The central maqsura, framed by transept and dome, and directly accessible from the palace, formed the ceremonial core of the mosque, where the accession of multiple caliphs was celebrated and whence they delivered the khutba.[86] The qibla wall, which framed these ceremonies, thus helped to form the public image of the caliphs (see fig. 7). At the top of the wall, a row of five windows is separated by a stretch of solid wall from a row of three larger windows below.[87] A gold inscription bearing the text of Sura 102 of the Qurʾan, which is concerned with the final judgment, may have run between these rows.[88] Beneath the lower row appeared the mosque’s famous mosaic frieze. Only portions of the courtyard frieze are preserved today (for example, fig. 9), but from the medieval descriptions we learn that it originally continued on all four walls of the sanctuary.[89] Like the mosaics of the courtyard, those in the sanctuary depicted cities and trees.[90] One tradition states that the Kaʿba was depicted above the mihrab.[91] The medieval authors emphasize the mosaics' colors: in addition to gold, mentioned by all, we hear of greens, reds, and whites.[92]

Directly beneath the mosaic frieze ran the so-called *karma*, a marble strip, still partially preserved in the nineteenth century, carved with a continuous acanthus scroll filled with grapes and pomegranates.[93] In the medieval period, this was studded with jewels, including sapphires, pearls, coral, and carnelian, which must account for its extraordinary expense, a reported 70,000 dinars.[94] Beneath stood a display of a different stone-cutter's art, a frieze of marble revetments punctuated with engaged colonettes, still visible in the nineteenth-century photographs. For medieval viewers, this was one of the mosque's principal marvels. As the geographer al-Muqaddasi wrote in the tenth century: "Every vein [is] matched with the one beside it. Should an artist frequent this place for over a year, he might discover every day some new pattern and some fresh design."[95]

Beneath the revetment stood the most prominent set of inscriptions, whose content is transmitted by a ninth-century traditionist quoted by the twelfth-century Damascene historian Ibn ʿAsakir.[96] The four lines of text were executed "on golden bands with lapis" and were removed "before al-Maʾmun" (821–833).[97] The uppermost band contained the *basmala*, the "Throne Verse" (Qurʾan 2, 255–256), and the donor inscription, while the remaining three carried the texts of Suras 79, 80, and 81.[98] By comparing the length of the texts to the dimensions and articulation of the extant wall, it is possible to reconstruct their spatial disposition. If each letter occupied roughly the same horizontal stretch of wall, then the basmala will have filled the 23-foot (7 m) stretch from the western wall to the present-day Bab al-Ziyada, from which a 164-foot (50 m) expanse to the western transept pier will have carried the beginning of the throne verse, and the 69-foot (21 m) width of the central maqsura will have borne its cosmological conclusion: "His Throne doth extend over the heavens and the earth, and He feeleth no fatigue in guarding and preserving them, for He is the Most High, the Supreme (in glory)." The remaining, eastern stretch of the south wall would neatly accommodate the foundation inscription.[99] Beneath these epigraphic bands, finally, stood the mihrab, studded with "carnelian and turquoise stones of the largest size," and flanked by marble paneling.[100]

The qibla wall of the Great Mosque was a concentrated display of material splendor, a blaze of golden mosaic set with greens, whites, and reds, and of white marble studded with jewels. The mosaic and marble will have set off the epigraphic bands of blue and gold just as the marble and mosaics of the Dome of the Rock set off its inscriptions. The pavement below was a sea of white marble, and above stood the dome, which, in the words of an eighth-century poet, al-Nabigha al-Shaibani, “the birds themselves cannot reach . . . hung with golden lamps full of oil, whose light illuminates the Lebanon and the maritime coast.”[101] The intended impact is indicated by Yaqut’s tale of a visiting Byzantine delegation: “The envoys passed through the courtyard and came to the qibla, where they raised their eyes to look at the mosque. Then their chief hung his head and turned yellow. When his companions asked him why, he said, ‘In truth, I had told the assemblies of the Romans that the Arabs and their power would remain only a little while, but now, when I see what they have built, I know for sure that they will remain until the end of days.’ ”[102]

The wall’s coherent aesthetic was matched by a coherent iconography. For al-Nabigha, the frieze depicted not merely trees and cities but the entire land of Syria, thus rendering the mosque itself “the center of the earth,” while the inscriptions contained “the promises of the Lord and his threats.”[103] Indeed, the first line of the inscription promised the protection of an omnipresent god, whose throne encompassed heaven and earth. Beneath this stood the caliph’s de facto throne, his minbar. An imperial reading of this ensemble was close at hand: Muslim visitors, like Romans of five centuries before, enjoyed the delight of looking upon an image of the world in which nothing was depicted that did not belong to them. The horizontal axis of the frieze was anchored by the vertical axis of the minbar, the seat of the caliph, whom Umayyad ideology represented as “the rope extended between God and his creation.”[104]

The ensemble in its totality could present, like Farazdaq’s poem, an image of a universal and unified community led by a divinely guided caliph. Just as Farazdaq compared al-Walid to Solomon, so too does the ensemble resemble early Islamic descriptions of Solomon’s throne, with its bowers of trees and bejeweled vines.[105] However, for viewers less favorable to the Umayyad caliphs, the golden, bejeweled maqsura must have seemed closer to the throne of Kisra than the mat of Muhammad.

Perhaps this is why the caliphs drew attention to the limits that the inscriptions placed on mundane rule when they ascended the minbar to address the community of believers assembled in the mosque. When Sulayman (715–717), al-Walid’s brother and successor, assumed the caliphate, the khutba that he delivered in Damascus cited the conclusion to one of the Qurʾan’s most vivid accounts of the end of the world (81, 17–18), which occupied the fourth band of the inscription behind him.[106] This sura’s apocalyptic imagery was fully exploited by Sulayman’s successor, the famously pious ʿUmar ibn ʿAbd al-ʿAziz (717–720), in one of the more dramatic khutbas on record. According to

Ibn ʿAsakir, ʿUmar recited the entirety of Qurʾan 81, 1–13, in which the sun is extinguished, the stars fall, the mountains disappear, and the oceans come to a boil. "Then he cried and all the people cried, and the mosque was convulsed by crying until I saw the walls of the mosque crying with him"— as indeed, the text that he had recited was inscribed on the wall behind him.[107] Sulayman and ʿUmar did not choose to activate the qibla wall's potential as a declaration of world rule, emphasizing instead its assertion of mundane transience.

Caliphal appearances in Damascus faced a double challenge: to match the splendor of the ancient empires whose territories the new state had seized, while avoiding the hubris that tradition associated with Kisra. The qibla wall of the Great Mosque answered that challenge by articulating a claim to world rule that simultaneously acknowledged the finitude of the world.[108] However, al-Walid's attempt to unify a community riven by internal divisions ultimately failed. In apocalyptic traditions, Damascus is the city where the Sufyani, a demonic tyrant of the last days who shares his name with a branch of the Umayyad family, will emerge. He is expected to slaughter the descendants of the Prophet on the steps of the Mosque and decapitate the religious scholars inside, after cavorting with a woman in the mihrab.[109] By the tenth century at the latest, Bab Jayrun was identified as the site where Yazid displayed the head of Husayn, and by the twelfth century a shrine of Husayn had been established just north of the gate.[110] In the late twentieth century, the mosque was still framed as an anti-Umayyad monument for some visitors, whose guides cursed the court of Yazid as "an oppressor's court, a despot's court, a murderer's court, a tyrant's court."[111] Although al-Walid's mosque was meant to forge a community, it was anchored by the figure of the caliph, upon whose character the judgment of the whole continued to depend.

THE CATHEDRA PETRI

The Frankish and Byzantine states also faced the challenge of articulating a form of imperial splendor that avoided ancient hubris. The confrontation was least direct in Byzantium, whose intellectuals took for granted the continuity of Roman history "from the Trojan War to the Byzantine present" and maintained "a specifically Roman view of their political sphere."[112] It is noteworthy that in the Byzantine tradition regarding Khosrow, the offending monument is always a painting, never an actual throne. The Byzantine conception of the imperial office and its rituals retained an explicitly cosmic aspect.[113] Not that the cosmocratic pretenses of the Byzantine emperors were unopposed: as we shall see in chapter 4, resistance to imperial universalism in Byzantium extended to disagreement regarding the very shape of the cosmos.

Early Frankish ideology, by contrast, presents more parallels to the Umayyad. Although the Franks did not conquer their core lands directly from the old empires, as the Muslim armies had done, in Aachen as in Damascus elite opinion differed on the proper limits of imperial splendor. Around Charlemagne's coronation in the year 800, for example, a critique emerged according to which "the Franks were chosen by God not to succeed the Romans but to replace them."[114] The equation of imperial coronation with universal rule was not native to Charlemagne's court but emerged centuries later in the context of imperial-papal conflicts.[115]

As in early Islam, the memory of the Throne of Khosrow was maintained in Carolingian milieux, especially through the annual celebration of the feast of the *Exaltatio Crucis* (September 14). We have already encountered the text of the *Reversio sanctae crucis*, with its vivid descriptions of the shah's throne, and his eventual beheading by Herakleios. The *Reversio* is a brief text in simple Latin, intended to be read annually at the celebration of the *Exaltatio*. Its popularity is attested by the number of preserved manuscripts that contain it: some 300, according to its most recent editor, of which at least seven date to the eighth and ninth centuries.[116] The *Reversio*'s description of Khosrow's throne served as a source for multiple Carolingian martyrologies (calendrically organized compendia on church feasts compiled for liturgical use).[117] The ninth-century martyrology of Ado of Vienne adopts both the account of its material splendor and the explicit accusation of hubris nearly verbatim. Khosrow "constructed a golden throne set with glimmering gems, where he had placed a chariot of the sun and the likeness of the moon and stars, and he installed hidden pipes for running water, so that he would seem to pour out rain from above, as if he were a god."[118]

Like the art of the Umayyads, that of the Franks approached imperial universalism only after the state was riven by internal divisions. Granted, a well-known dossier of texts describe a silver table decorated with an image of the entire world that was owned by Charlemagne and his son and successor, Louis the Pious, both of whom ruled an undivided empire. However, as we shall see in the next chapter, this table's origins are obscure, and it acquired unambiguous political significance only in the civil wars that followed Louis's death in 840. At the conclusion of this war, the Frankish kingdom was formally divided in three parts, while Louis's sons continued to spar over the imperial title. Charles the Bald assumed rule of the western third of the Frankish state, roughly the area of modern France, and was eventually crowned as emperor in Rome in 875, succeeding his brother and his nephew. Although Charles ruled as emperor for a mere two years before his death, the arts of his court have been associated with a high degree of universalist pretense.[119]

Some of Charles's supposed cosmocratic gestures are scholarly phantoms.[120] Other monuments of Charles's reign express a Christian universalism without reference to the king. Two nearly identical ivory caskets, today housed in Quedlinburg and Munich, are decorated by arcades, under which stand Christ and eleven of the apostles, with the twelve signs of the zodiac in the lunettes (fig. 10).[121] One plausible explanation for the juxtaposition of these two iconographic sets associates the zodiac with "unconstrained rulership and cosmic power," but of the apostles, not of Charles.[122] A different object certainly depicts the king, but not necessarily as a universal ruler. The so-called Ellwangen Casket was discovered in 1959 under the altar of a Carolingian-era monastery, where it had been buried as a reliquary.[123] The lid (fig. 11) displays six medallions, understood as representations of the planets, arranged around the hand of God; a seventh planetary medallion appears on the front, bracketed by eagles bearing books.[124] Three further medallions on the casket's back have been understood as portraits of Charles the Bald, his wife Richildis, and his son Louis the Stammerer (fig. 12).[125] For one interpreter, the juxtaposition of planets and portraits represents the deification of the ruling family.[126] But if, as the archaeology suggests, the box originally served as a reliquary, the royal portraits may simply commemorate the donation of the relics.[127]

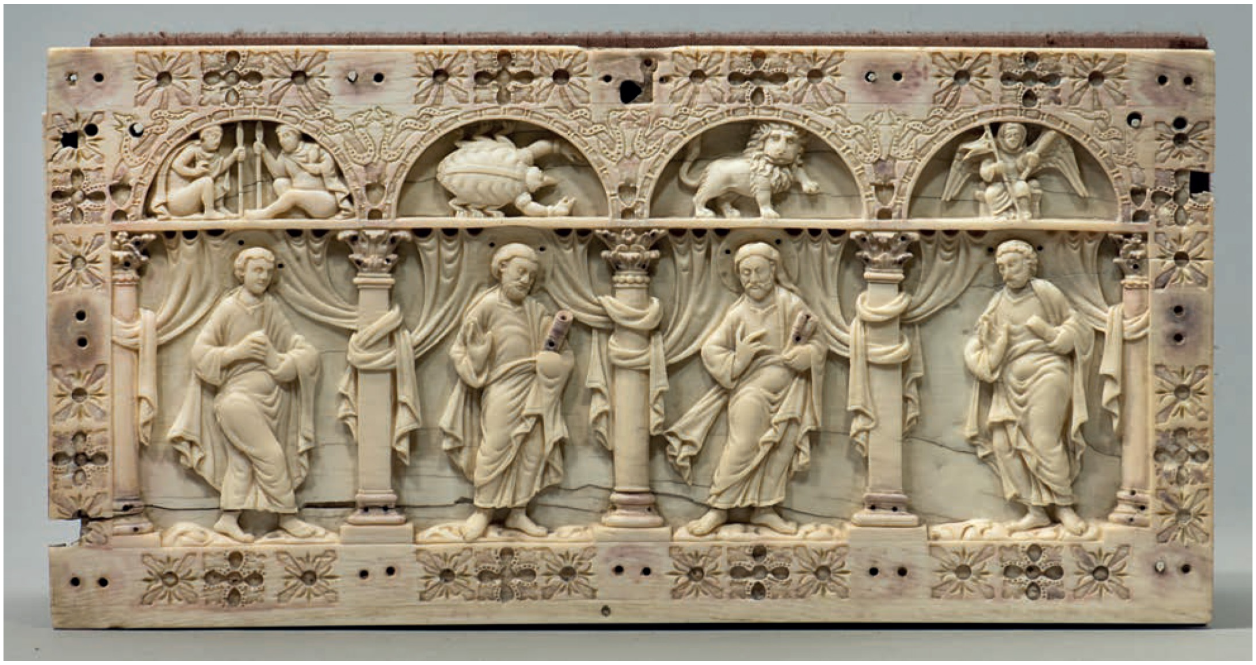


FIGURE 10
Four apostles with signs of the zodiac. Western Europe, 9th century. Ivory, 11.8 × 23.5 cm. Munich, Bayerisches Nationalmuseum (MA 174).

However, in the so-called Cathedra Petri we find a throne that explicitly juxtaposes the coronation of a Frankish king with images of the constellations, the sun, and the moon. Between the seventeenth and the twentieth centuries, this object was housed in the apse of St. Peter’s, encased within an extraordinary bronze monument executed by Gian Lorenzo Bernini (completed 1666) that exhibits no fear of material splendor (fig. 13): a reliquary for the throne of St. Peter, whence the apostle of Christ and first Bishop of Rome executed his pastoral duties as leader of the Christian community. In 1968, the medieval throne was removed from its Baroque container for the last time.[128] What emerged was a wooden structure clad in ivory (fig. 14). Its seat is formed by a rectangular prism whose sides are filled with carved wooden arcades and its front with a hinged wooden diptych, now completely covered with ivory plaques. The seat back is a rectangular frame filled with a wooden arcade and crowned by a triangular gable containing a wooden tympanum. Inside the tympanum, three oval openings and seven smaller depressions were once filled with enamel or precious stones, just as all wooden surfaces not covered by ivory were once sheathed in an alloy of gold, silver, and copper, of which mere traces remain.[129]

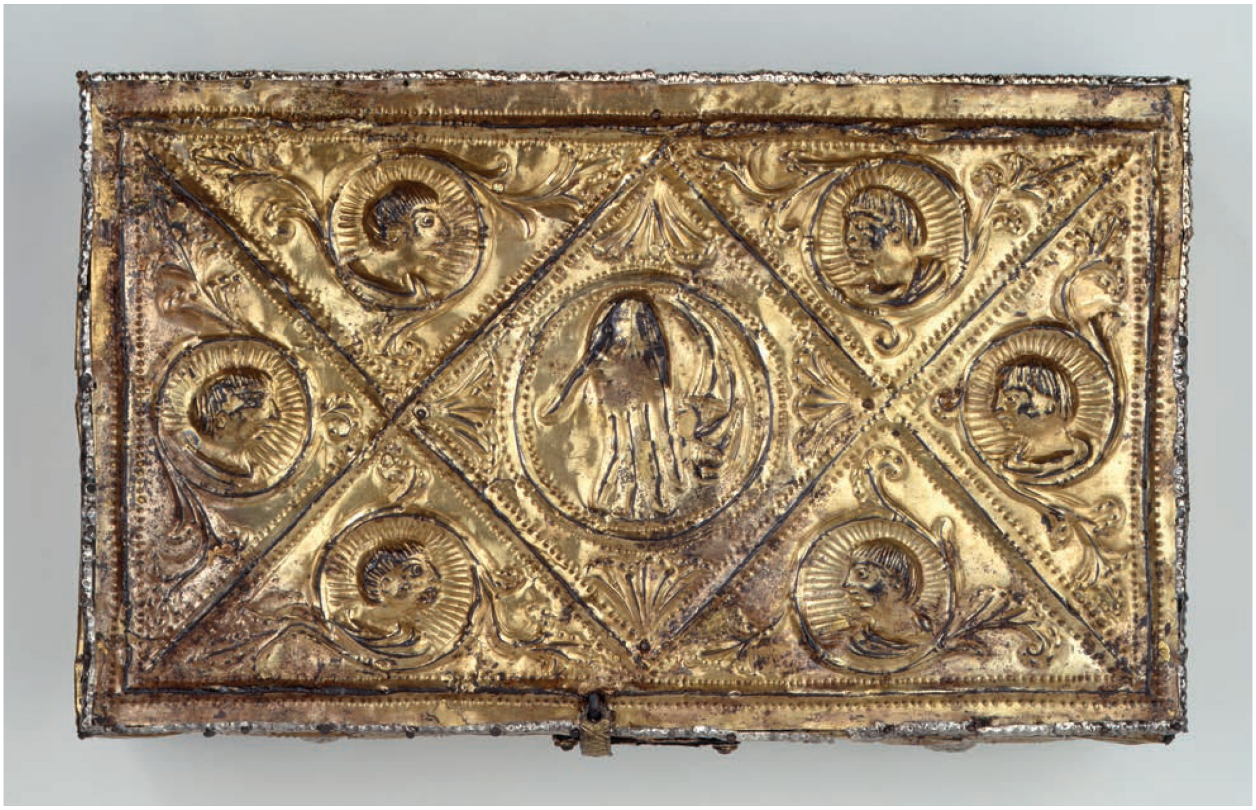


FIGURE 11
Ellwangen Casket, lid, six planets and the hand of God. Western Europe, 9th century. Metal on a wooden core, 18 × 30 cm. Stuttgart, Landesmuseum Württemberg (L 1964–55). © Landesmuseum Württemberg, Stuttgart, 2017.

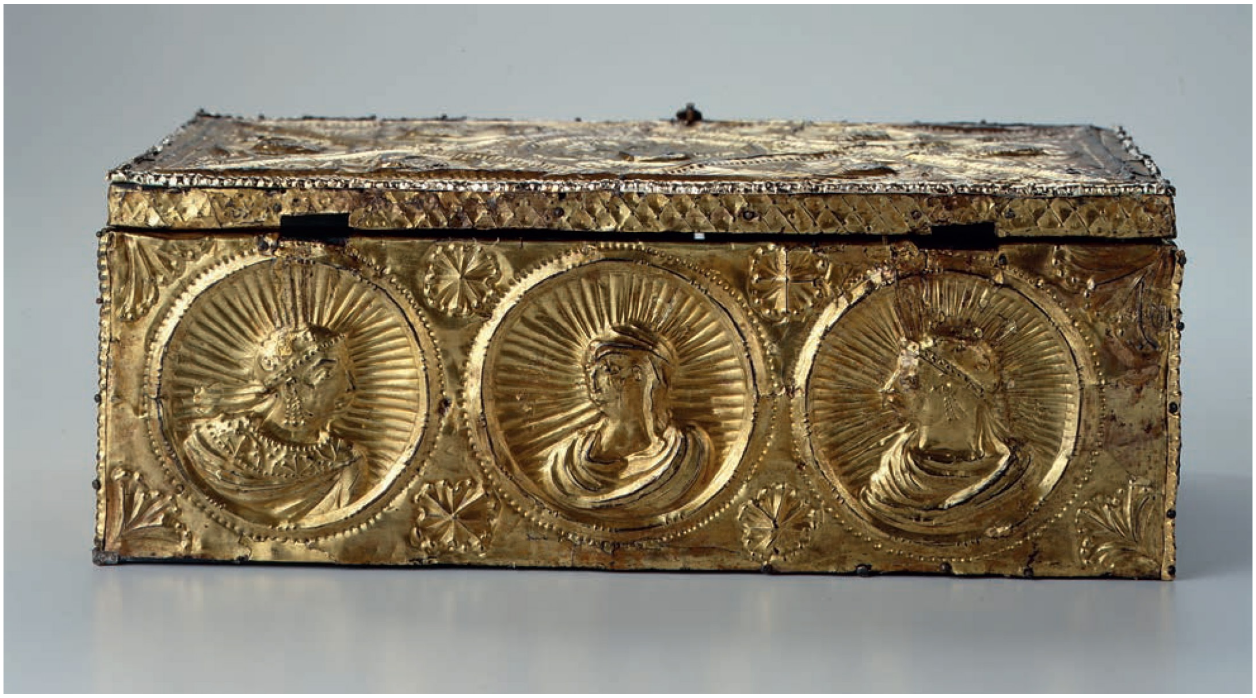


FIGURE 12
Ellwangen Casket, back, portrait medallions identified as Charles the Bald, Richildis, and Louis the Stammerer. © Landesmuseum Württemberg, Stuttgart, 2017.

Two different techniques distinguish the throne's ivory ornaments. The rectangular strips in the wooden beams of the frame and the smaller pieces in the spandrels and pilasters of the arcade are deeply carved. The rectangular plaques on the diptych at front, by contrast, are lightly incised, and were originally inlaid with gold leaf, precious stones, and glass.[130] With different techniques come different themes. The incised plaques display the twelve labors of Hercules and curious figures best described as "monsters."[131]

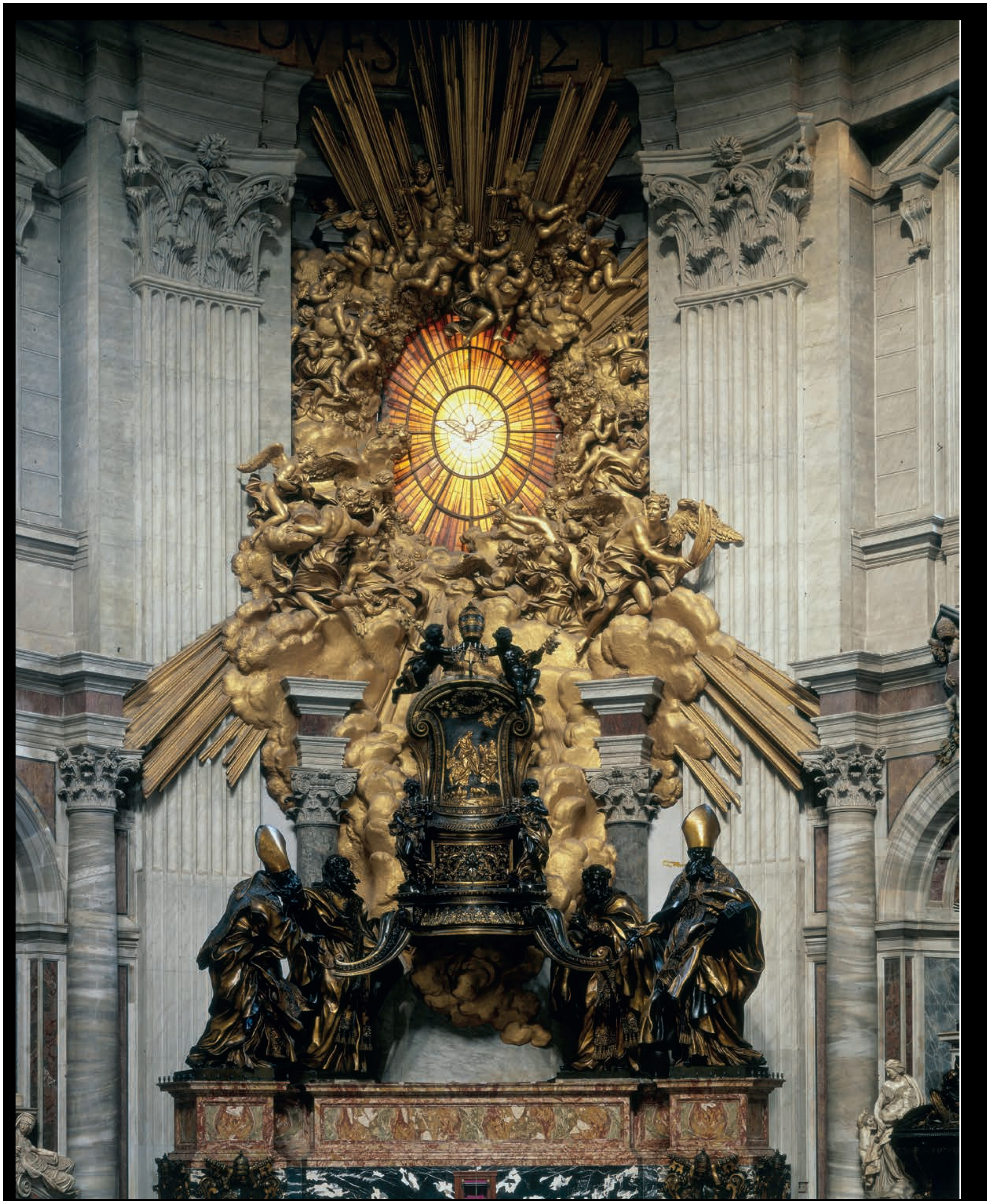


FIGURE 13
Basilica di San Pietro in Vaticano, view of choir with the *Cathedra Petri* by Gian Lorenzo Bernini, completed 1666.

The strips, by contrast, are carved with vine scrolls, some plain and some inhabited by figures barely legible at a distance but carefully delineated by an eighteenth-century draughtsman (fig. 15).[132] Those scrolls that frame the seat are filled with animals, hybrid beasts, and some human riders. Those that frame the rectangular part of the seat back depict human figures in battle, with the exception of the central portion of the upper strip. Here a mustachioed man wearing a crown and holding an orb is approached from each side by a pair of angels.[133] Those closest to him offer crowns with draped hands, while those farther away carry palm branches; the rightmost figure also carries a book. Finally, three of the four strips that filled the oblique sides of the triangular gable are preserved. At bottom right appears the figure of Terra, which may originally have been joined by a figure of Oceanus at left. The remaining spaces are filled by figures of the constellations (Sagittarius, Orion, and Hercules on the preserved strip at left; and Hercules, Serpentarius, Perseus, Centaurus, Arcturus, and Capricorn at right), and at the peak by the figures of Sol at left and Luna at right.[134]

The throne was constructed in two stages. The front of the seat preserves slots like those that hold the arcades on the sides and back, but the wooden diptych that now occupies that field is held in place by a crossbar, and thus represents a second phase.[135]

The structural beams were cut from a single French oak that was felled around 843, while the wooden diptych was cut from a different oak, also French, that was felled around 857.[136] Thus the throne was probably built in present-day France in the third quarter of the ninth century. When it arrived in Rome is less clear. A “cathedra sancti Petri” in St. Peter’s basilica is first attested in the 1140s, but a late ninth-century “sella apostolica” may already refer to the throne.[137]

Since 1968, the ruler depicted on the seat back has been unanimously identified as Charles the Bald, who has therefore figured in all theories regarding its function.[138] Most authors assume that the cathedra was prepared for one of Charles’s coronations (as king of Lotharingia in Metz, 869, as emperor in Rome, 875, or both), and was left in Rome as a gift.[139] In some accounts, the images of the constellations, sun, and moon function as a frame that presented the seated Charles “as the cosmocrator who rules the world,” or expressed his desire for deification and apotheosis.[140] By contrast, Lawrence Nees has focused on the figure of Hercules, known in Carolingian texts for his vices, to argue that the chair was meant to remind Charles of the “pitfalls of the Roman [imperial] path upon which he had embarked.”[141]

The throne's cosmic decoration could also have served as a warning. The biblical description of the chryselephantine Throne of Solomon (1 Kings 10, 18) has been cited as a possible model for the Carolingian cathedra, but the descriptions of the Throne of Khosrow from the *Reversio* and the Carolingian martyrologia provide a far closer match: a gold throne studded with gems, and decorated with images of the sun, the moon, and the stars.[142] In the liturgical context in which these descriptions were annually rehearsed, this splendor did not elevate Khosrow to the status of a god, but signaled the hubris of a man who falsely believed himself a peer of God. Thus, for the small circle of figures who might have examined the throne at close range (courtiers, churchmen, and kings), the gable's decoration could easily evoke an archetypal tyrant.

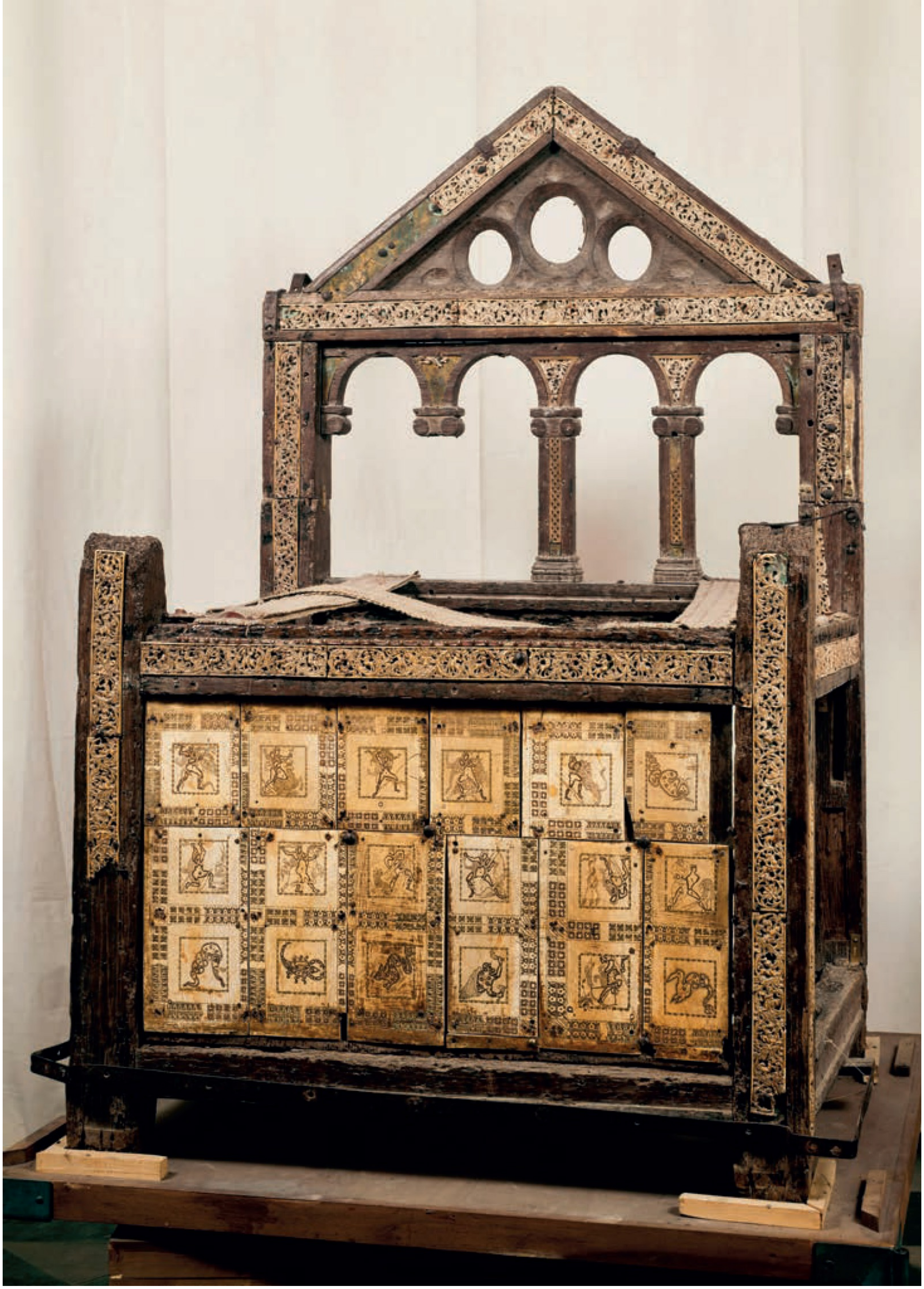


FIGURE 14
Cathedra Petri. Western Europe, 9th century. Wooden throne with carved ivory cladding, height 136 cm. Basilica di San Pietro in Vaticano.

It would be odd for a medieval throne to carry a portrait of its intended occupant.[143] Perhaps the throne depicts Charles not as its recipient but as the donor of a handsome gift to the Basilica of St. Peter, and the crowns represented not events that the chair was intended to host but the titles that Charles had already received.[144] In the cluttered vastness of Old St. Peter's, the tiny image of Charles on the cathedra would have joined a series of images of earlier imperial donors: Constantine was depicted in the atrium and on the triumphal arch, and Charlemagne appeared with Pope Hadrian and St. Peter on a metal plate that decorated the front of the main altar.[145]

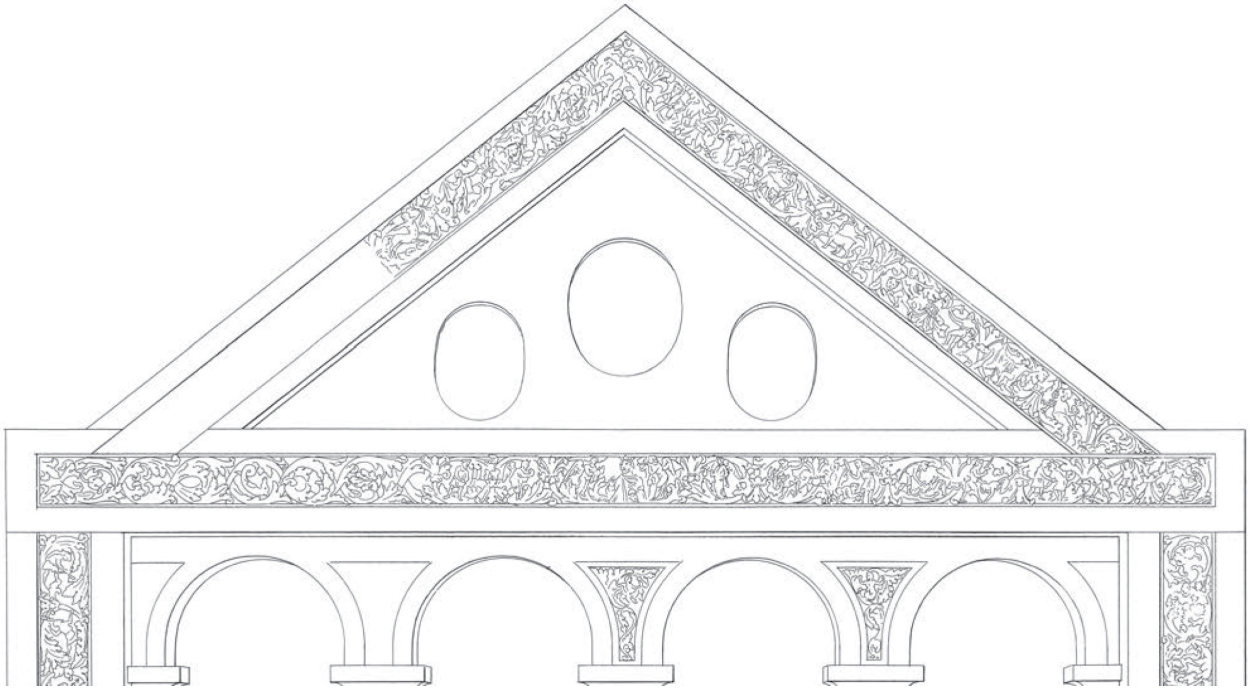
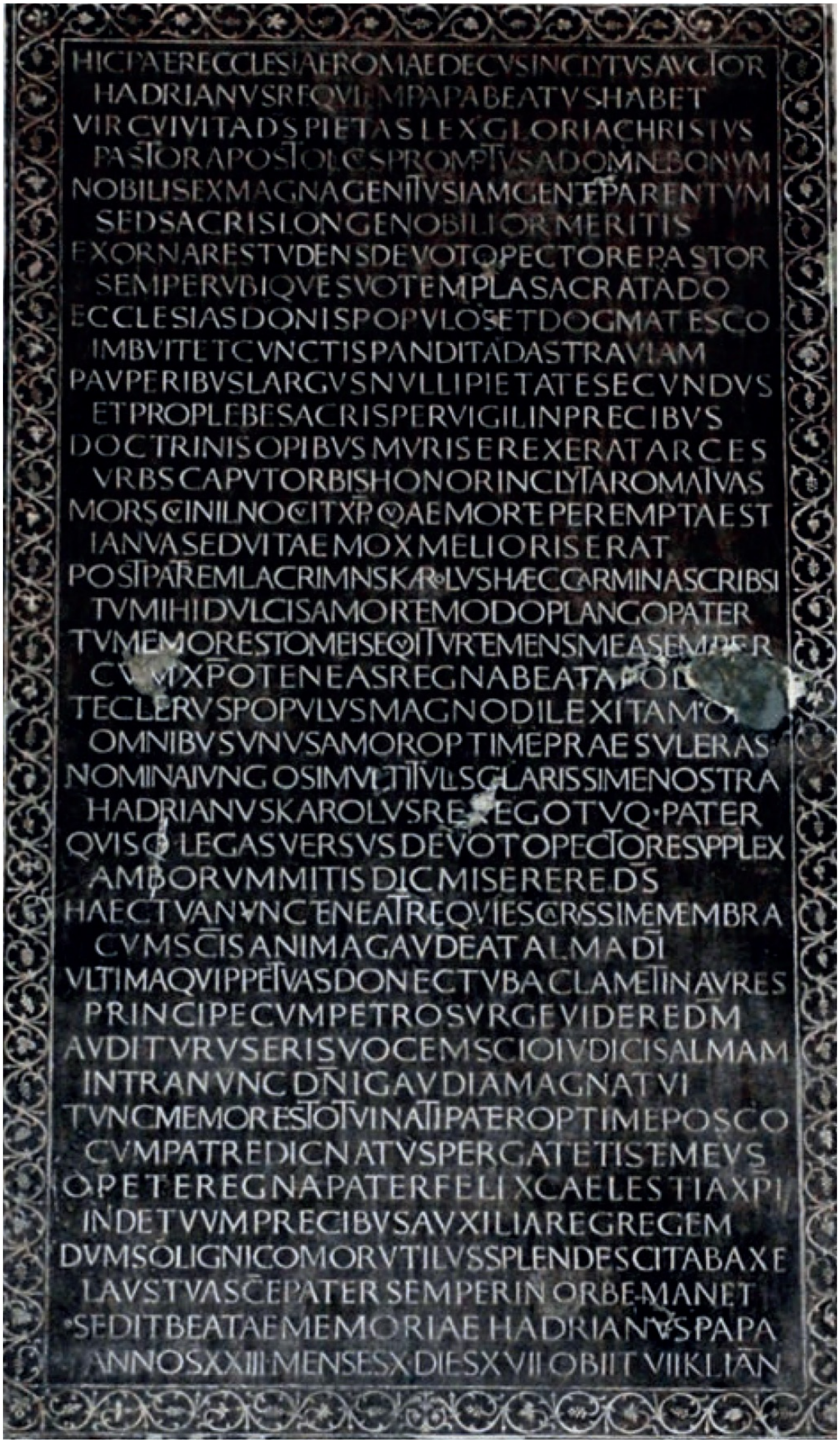


FIGURE 15
Cathedra Petri, decoration of the gable, after a drawing by S. A. Scardovelli. Arthur Ashpitel and Alexander Nesbitt, *Two Memoirs of Saint Peters Chair Preserved at Rome* (London: Nichols and Sons, 1870), pl. II.

The inscriptions displayed in the basilica provided a different framework through which the throne's cosmic decoration could be understood. The inscription on the triumphal arch, which depicted Christ between Constantine and St. Peter, declared: "Since by your lead the world rose triumphant to the stars, the victorious Constantine dedicated this hall to you."[146] Here it is not the ruler who ascends to the stars but a universal community.[147] The inscription establishes a tripartite relationship: the emperor supports the church in its mission to redeem humanity. So too for the epitaph of Pope Hadrian (772–795), which was composed at Charlemagne’s request by his tutor, Alcuin.[148] Carved in black marble, this was originally installed on the western wall of the south transept of St. Peter’s, above Hadrian’s tomb (fig. 16).[149] Lines 9 and 10 of the poem declare of Hadrian: “Churches with gifts and peoples with holy teaching / he imbues, and for all he opens a way to the stars.”[150] This inscription also celebrates the apotheosis not of an individual but of a humanity redeemed by a bishop’s guidance.

The inscription of the arch and the epitaph for Hadrian provide an immediate, local context for the reception of the Cathedra Petri, within which the throne’s astral imagery would evoke the relationship between imperial donors, episcopal shepherds, and their universal flock. The emperors supported the bishops, who led their flock to heaven. Papal claims to universal stewardship, if not universal rule, had already found monumental expression in the eighth century, in a triclinium of the Lateran Palace constructed under Pope Zacharias (741–752). Occupying the top story of a tower, this was decorated with a depiction of the *orbis terrarum* and accompanied by verse inscriptions.[151] The closest European parallel to the terrestrial mosaics of the Damascus mosque occupied a papal palace, not a royal residence.



HICPATERECCLESIAEROMAEDECVSINCLYTVSAVCTOR
HADRIANVSREQVIEMPAPABEATVSHABET
VIRCVIVITADSPIETASLEXGLORIACHRISTVS
PASTORAPOSTOLICVSPROMPTVSADOMNEBONVM
NOBILISEXMAGNAGENITVSIAMGENTEPARENTVM
SEDSACRISLONGENOBILIORMERITIS
EXORNARESTVDENSDEVOTOPECTOREPASTOR
SEMPERVBIQVESVOTEMPLASACRATADO
ECCLESIASDONISPOPVLOSETDOGMATESCO
IMBVITETCVNCTISPANDITADASTRAVIAM
PAVPERIBVSLARGVSNVLLIPIETATESECVNDVS
ETPROPLEBESACRISPERVIGILINPRECIBVS
DOCTRINISOPIBVSMVRISEREXERATARCES
VRBSCAPVTORBISHONORINCLYTAROMATVAS
MORSCVINILNOCVITXP̄QVAEMORTEPEREMPTAEST
IANVASEDVITAEMOXMELIORISERAT
POSTPATREMLACRIMANSKAROLVSHAECCARMINASCRIBSI
TVMIHIDVLCISAMORTEMODOPLANGOPATER
TVMEMORESTOMEISEQVITVRTEMENSMEASEMPER
CVMXP̄OTENEASREGNABEATAPOL[illegible]
TECLERVSPOPVLVSMAGNODILEXITAMO[illegible]
OMNIBVSVNVSAMOROPTIMEPRAESVLERAS
NOMINAIVNGOSIMVLTITVLISCLARISSIMENOSTRA
HADRIANVSKAROLVSREXEGOTVQ·PATER
QVISQ·LEGASVERSVSDEVOTOPECTORESVPPLEX
AMBORVMMITISDIC̄MISEREREDS̄
HAECTVANVNCTENEATREQVIESCARISSIMEMEMBRA
CVMSC̄ISANIMAGAVDEATALMADĪ
VLTIMAQVIPPETVASDONECTVBACLAMETINAVRES
PRINCIPECVMPETROSVRGEVIDEREDM
AVDITVRVSERISVOCEMSCIOIVDICISALMAM
INTRANVNCDN̄IGAVDIAMAGNATVI
TVNCMEMORESTOTVINATIPATEROPTIMEPOSCO
CVMPATREDICNATVSPERGATETISTEMEVS
OPETEREGNAPATERFELIXCAELESTIAXP̄I
INDETVVMPRECIBVSAVXILIAREGREGEM
DVMSOLIGNICOMORVTILVSSPLENDESCITABAXE
LAVSTVASC̄EPATERSEMPERINORBEMANET
·SEDITBEATAEMEMORIAEHADRIANVSPAPA
ANNOSXXIII·MENSESX·DIESXVII·OBIITVIIKLIAN̄

FIGURE 16
Epitaph of Pope Hadrian, Basilica di San Pietro in Vaticano, ca. 795.

A MORE POPULOUS COSMOS

The critique of the would-be cosmocrat was available already in antiquity. The image of Khosrow enthroned, surrounded only by the heavenly bodies, was in one sense a distillation of a philosophical critique of tyranny. His was the hubris of the human who would set himself outside of human society, as if peerless and self-sufficient. In Khosrow, however, the figure of the cosmocrat as tyrant was given a specific and highly significant historical location, one consistently outside of the emergent religious and political communities of the early Middle Ages. For Christians, Chosroes was the blasphemer who stole the True Cross, just as for Muslims, Kisra was the contemporary of the Prophet who heard his message and arrogantly rejected it. But for Khosrow's hubris to acquire its full force, it had to retain something of its ambivalent charge. His throne needed to express a genuinely attractive splendor, if only to magnify the significance of its ultimate rejection.

The Throne of Khosrow, then, gained its fullest significance in its steady presence as a negative exemplum, a primer on how *not* to claim world rule. Thus the Damascus mosque strove to present an image of a united community under the aegis of a Solomonic caliph, but explicitly acknowledged the finite nature of terrestrial rule. It was only partially successful: ultimately its maintenance of the sole figure of the caliph as the axis that unites heaven and earth allowed opponents of the Umayyads to reinterpret it as an antimonument, as a reminder of a court of tyrants. Although the origins of the Cathedra Petri remain obscure, its eventual success as a monument not to a Frankish ruler but to the first Bishop of Rome resulted from a different approach. The inscriptions of St. Peter's tempered the throne's impact, not by asserting the transience of terrestrial rule, but by introducing to the relationship between ruler and community a third term, that of the bishop.

This eventual success could be understood, following L'Orange's religious interpretation, as a sign that cosmic iconography "in the service of man" had become "a profanation of the Christian cosmos and its creator."[152] But it could also be understood in a more general sense, to demonstrate that the image of the cosmos— which was, after all, a thickly populated place— was better suited to express relationships between peers than to declare the rule of one. As we shall see in the next chapter, this function was commensurate with the new styles of rule that characterized both the Islamic and the Frankish states.

2 Declaration and Transaction

Just as it is no longer meaningful in contemporary cosmology to speak about the "center of the universe," so too has the figure of the cosmocrator become anachronistic in contemporary political discourse. Explicit claims to world rule would be inappropriate for an individual in a state that is supposed to be democratic, and presumptuous for a single nation within a world system that is supposed to be multipolar. The astronomical metaphor most appropriate to political philosophy today is that of the constellation, understood as a network linking various actors, none of whom claims primacy or centrality.[1]

Surely, however, such scruples are the invention of an egalitarian modernity. In the Middle Ages, or so we have come to assume, any ruler worth his salt claimed absolute, divinely granted dominion. Thus one recent commentator has posited that "references to cosmic monarchy in the medieval world, East and West, were such a commonplace cliché of royal art and literature as to constitute a rather banal sine qua non of kingship."[2]

In the previous chapter, we saw that the figure of the cosmocrator in the early Middle Ages was ambivalent, and was ghosted by the memory of a specific tyrant past. Nevertheless, the assumption of its ubiquity and banality has become self-fulfilling. Wherever an image of the cosmos might be found, an art historian will discover a claim to world rule. As Oleg Grabar once wrote of his teacher, E. Baldwin Smith, he "tried to make sense of domes of all sizes by nearly always seeing kings under them."[3] This tenacious interpretive reflex has led us to invent scenarios for the display of cosmocracy that are at best conjectural, at worst contradicted by the evidence.

Nevertheless, there are ample preserved medieval monuments that so explicitly juxtapose living rulers with images of the cosmos that an interpretation as a claim to universal rule might seem unavoidable. The present chapter focuses on three: the Star Mantle of Henry II, preserved today in Bamberg (fig. 17); a silver table, destroyed long ago, that was owned by successive Frankish kings in the ninth century; and the frescoed dome of the caldarium of the princely bath of Qusayr ʿAmra, in the Jordanian steppe (fig. 18). Although they were executed in diverse media and at opposite ends of the former Roman Empire, these monuments share two features in common. First, each is decorated with an explicit depiction of the cosmos derived from scholarly models. Thus the mantle bears two hemispheres that fit comfortably within traditions of celestial cartography, and figures of individual constellations like those that accompany the didactic poem of Aratus and its derivatives (on this tradition see chapter 3).[4] Second, each object possessed some relationship to a sovereign ruler. The reigning Ottonian emperor is invoked in the epigraphic program of the star mantle, the silver table was owned by Charlemagne and two of his royal descendants, and a frescoed inscription at Qusayr ʿAmra acclaims al-Walid ibn Yazid, an Umayyad emir who would later become caliph (743–744).

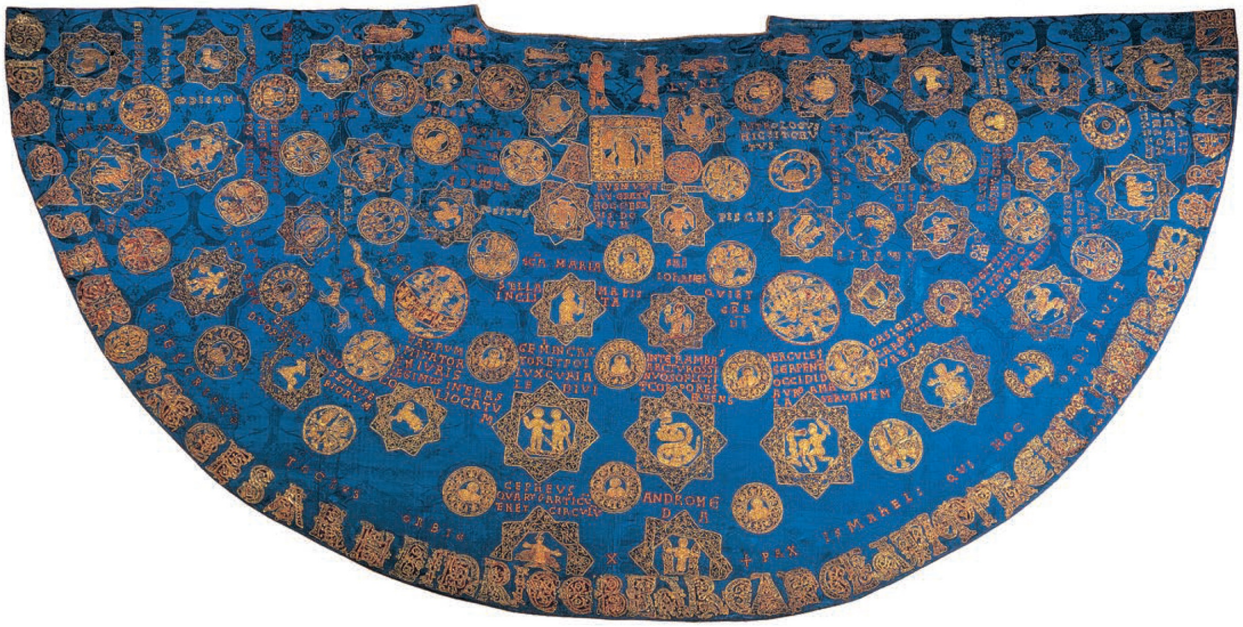


FIGURE 17
Star Mantle of Henry II. Central Europe, ca. 1020. Gold embroidery mounted on silk, diameter 297 cm. Bamberg, Diözesanmuseum.

The appearance of such explicit depictions of the cosmos in princely and imperial milieux has often been explained by invoking the concept of cosmocracy. Thus a recent interpretation of the star mantle assumes a role in the ceremonial wardrobe of Henry II: “When he wore [the mantle], [Henry] would have been clothed symbolically in the universe itself. . . . The star cloak was a tool that the emperor could use to embody his cosmocracy in a performative manner.”[5] Similarly, the silver table depicting the universe, first mentioned in the sources together with two additional tables depicting the cities of Rome and Constantinople, becomes part of a “monumental triptych, in which Charlemagne, seated among them, appeared as consul or emperor in the late Roman tradition, claiming universal rule.”[6] In both interpretations, the object serves as a syntactical unit in a declaration made by a ruler: “I’m king of the world.”

Such interpretations are habitually buttressed by reference to Hans Peter L’Orange’s *Studies on the Iconography of Cosmic Kingship in the Ancient World.* For L’Orange, cosmocracy was native to the empires of the ancient Near East and Rome and maintained only in selected medieval polities, above all the Byzantine.[7] The objects that L’Orange associated with cosmocracy do not bear explicit images of the cosmos like those found on mantle, table, and cupola, invoking the cosmos allusively instead. For example, L’Orange discovered cosmic significance in the rotation of Nero’s dining hall, not its decoration.[8] One of the few medieval objects that L’Orange discusses at length is a relief tondo depicting a Byzantine emperor now in the collection of Dumbarton Oaks (fig. 19).[9] His description of the tondo gives a sense of the simultaneously allusive and declarative nature of his “iconography of cosmic kingship”: “*Levatus est* as a new Sun and cosmocrator, on the world shield, the emperor is surrounded by a mighty *clipeus caelestis.* The light seems to beam forth from him through the radiating lines, and heavenly stars— indicated by the quadrifoils covering the ground— seem to surround him in the cosmos.”[10]

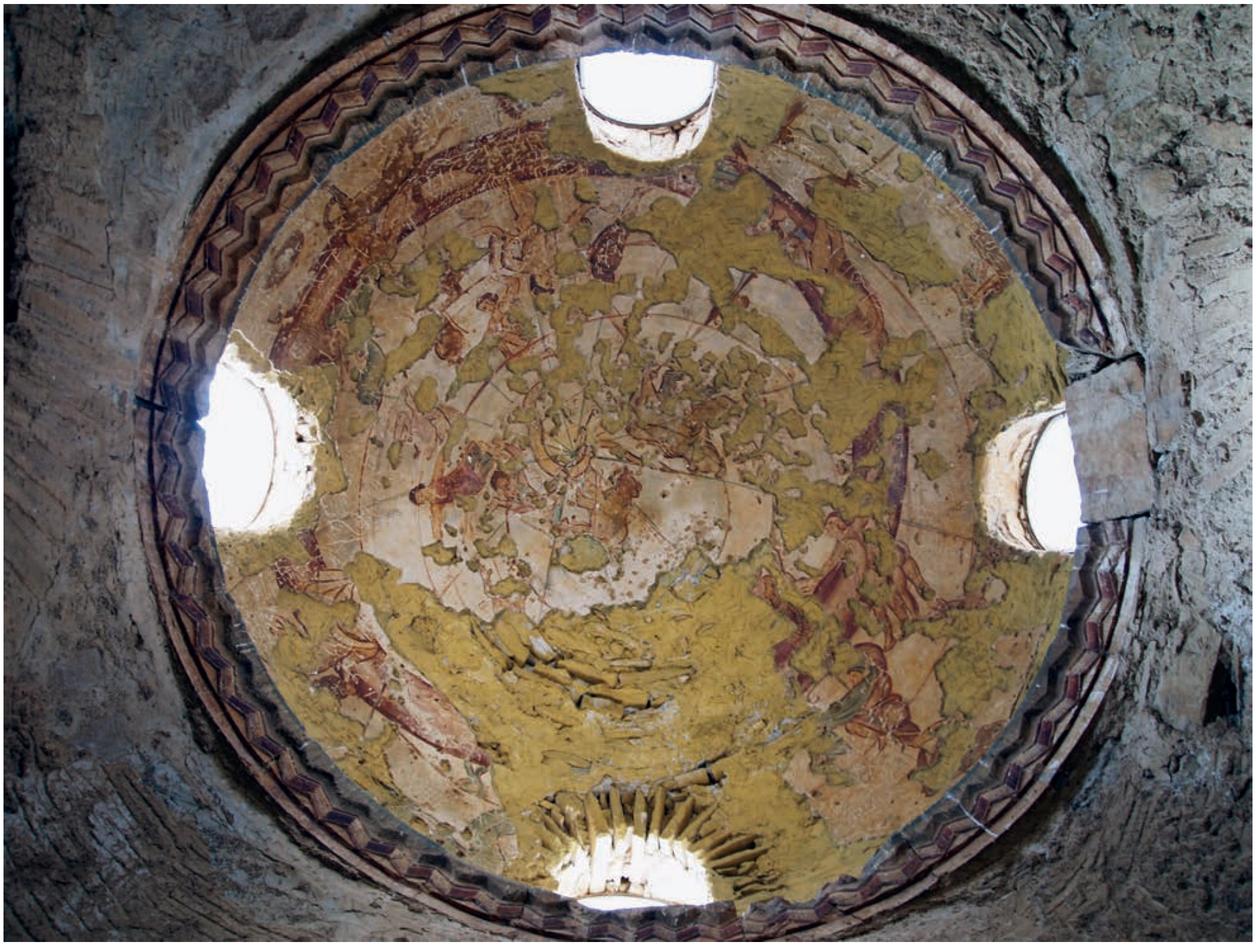


FIGURE 18
Qusayr ʿAmra, caldarium, cupola.

No explicit depictions of earth and heaven are found on the relief, no personifications of the planets, none of the classical constellations. Instead, L'Orange assumes an allusive mode of representation: the shield stands for the earth, the form of the tondo for the celestial sphere, and the quatrefoil shapes for the stars. Still, the total effect is far from subtle, and L'Orange's interpretation of the tondo as a declaration of world rule is shared by many— perhaps including the Prussian prince who, in the nineteenth century, displayed it in his breakfast nook.[11] But the tondo is different in kind from the mantle, table, and cupola. Where the tondo is allusive, they are explicit, drawing their iconographies directly from the repertoire of scientific illustration. Was their explicit mode of representation simply another means to the same end, the declaration of a particular individual as cosmocrator, or did it serve some other purpose?

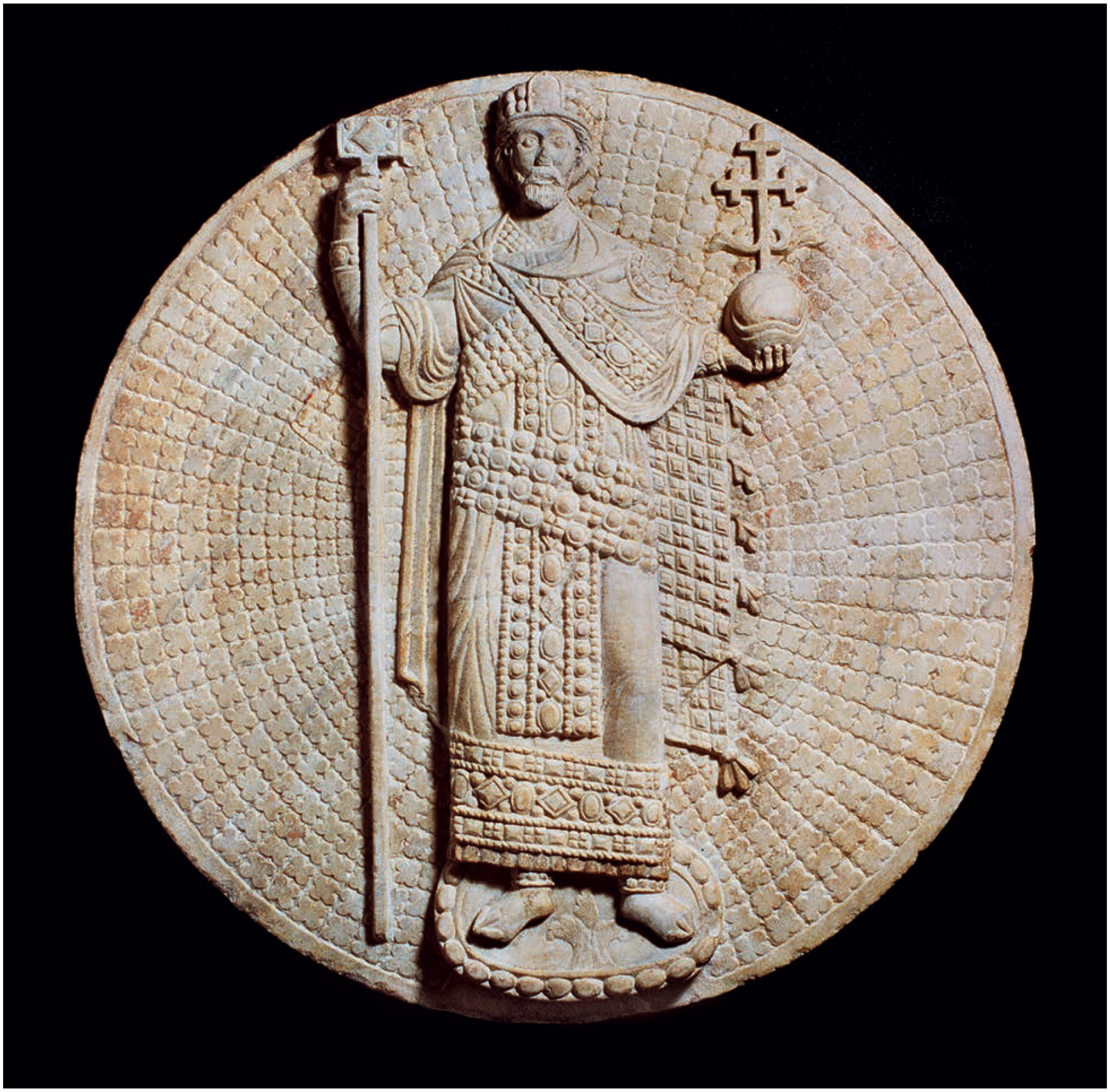


FIGURE 19
Representation of a Byzantine emperor. Constantinople or Venice (?), 12th century. Marble, diameter 90 cm. Washington, D.C., Dumbarton Oaks (BZ.1937.23).

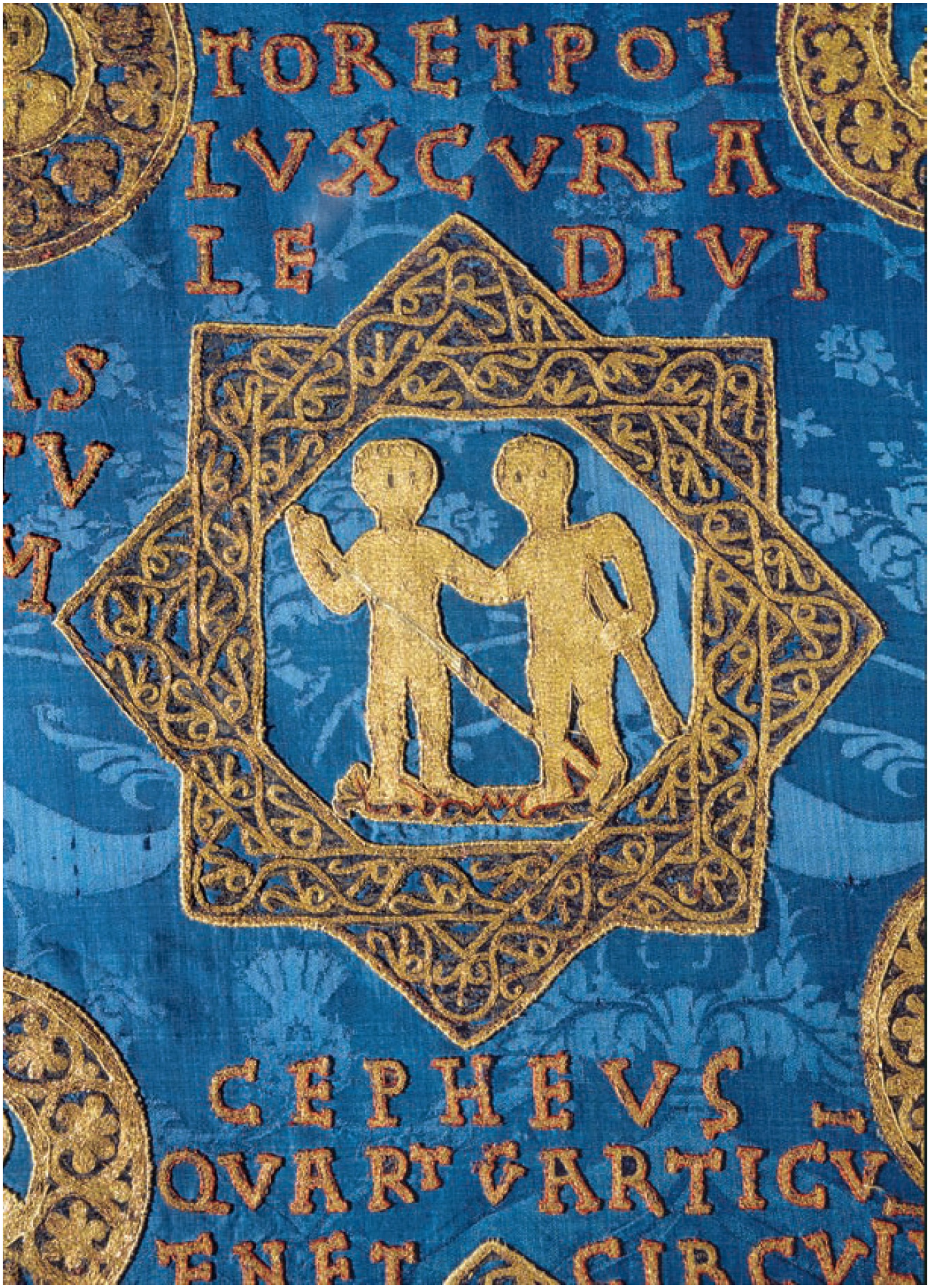

TORETPOI
LVXCVRIA
LE DIVI
AS
TV
M
CEPHEVS
QVARTV ARTICV
ENET CIRCVLI

FIGURE 20
Gemini. Star Mantle of Henry II (detail). Central Europe, ca. 1020. Gold embroidery mounted on silk. Bamberg, Diözesanmuseum.

THE STAR MANTLE OF HENRY II

As displayed today in the Diözesanmuseum Bamberg, the Star Mantle of Henry II forms a nearly perfect semicircle almost 10 feet in diameter (9 ft. 9 in., 297 cm; see fig. 17).[12] The present ground of blue silk woven with a pattern of pomegranates dates to the fifteenth century, when a number of older images and letters embroidered in gold thread on a purple ground were cut from their original mount and reset. In the 1980s, conservators analyzed the preserved scraps of the original ground that still cling to the embroidered figures of the mantle (for example, fig. 20), and concluded that the fifteenth-century restorers set most of the images and letters in their original relative positions. The most drastic change was to the inscriptions that accompany the figures of the constellations, which were thoroughly rearranged to form a new set of texts.[13]

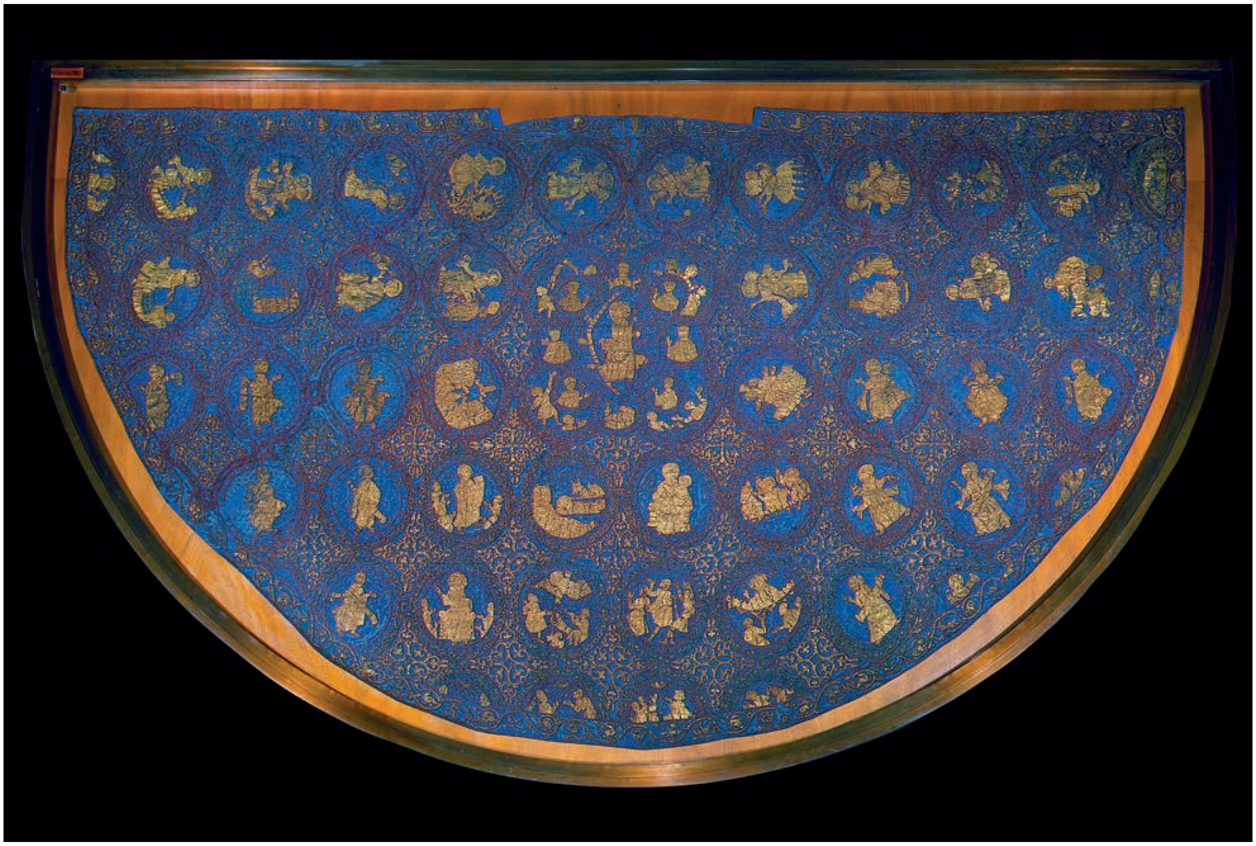


FIGURE 21
Mantle of Kunigunde. Central Europe, 11th century. Gold embroidery on silk. Bamberg, Diözesanmuseum.

The composition of the mantle presents an overall symmetry, even if it appears cluttered when compared to an intact eleventh-century mantle also preserved in Bamberg, the “Mantle of Kunigunde” (fig. 21).[14] The star mantle (see fig. 17) is anchored by a square frame at top center, within which a figure of Christ in a mandorla and the symbols of the four evangelists (derived from the Book of Revelation) together form a “Majestas Domini.” This central element is bracketed by three matching pairs. Above it appear personifications of the sun, at left, and the moon, at right, which are set within eight-pointed stars formed by two interlocking squares. To either side of the Majestas Domini two isolated Greek letters evoke the divine declaration in Revelation 1, 8: “I am the alpha and the omega.” Beneath the letters, a second pair of eight-pointed stars contains the figures of angels, depicted with multiple wings as described in Revelation 4, 8, and identified by inscriptions as a cherub, at left, and a seraph, at right. Like the garment as a whole, this central cluster combines religious and astronomical iconography, but it is distinguished by a density of borrowings from the apocalyptic imagery of Revelation.[15]

The mantle’s remaining decorative elements may be divided into three types: unframed figures, figures in eight-pointed stars, and figures in circular medallions. With the exception of two unframed constellations (Serpens and Canicula) on the left side of the mantle, the unframed figures are confined to the center of the garment’s upper edge (its “neck”). Above the square frame of the Majestas Domini are two standing figures in liturgical vestments, both nimbed and each holding a codex in the left hand and a chalice in the right. These have been plausibly identified as “clerical saints.”[16] At either side of and perpendicular to the standing figures, six seated figures appear, likewise nimbed.[17]

The figures in eight-pointed stars and those in circular medallions are evenly distributed over the remaining surface of the mantle. A rough alternation between medallions and stars is preserved, but was probably more rigidly maintained on the original garment, in which the spaces between the frames would also have been filled with ornamental embroidery like that found on the Mantle of Kunigunde (see fig. 21).[18] The stars are, almost without exception, larger than the medallions, and increase in size from the neck of the garment to its extremities. Most contain figures that can be immediately recognized as standard constellations (see, for example, Gemini, fig. 20), although four are now labeled as religious or allegorical figures (Mary, St. John, the Lamb of God, and Virginity). In all likelihood these too originally represented constellations, but were reinterpreted when their inscriptions were rearranged in the fifteenth century.[19]

The figures in circular frames may be further subdivided into three types. Fourteen essentially identical medallions are divided into four sections that are occupied by the same evangelist symbols that appear in the Majestas Domini. Another twenty-one medallions, also essentially identical, contain the nimbed busts of women who have been variously identified as virtues and as saints.[20] Two additional circular elements, substantially larger than the other medallions, depict the "summer and winter hemispheres" of a celestial globe, with the band of the zodiac clearly indicated on each.[21] Although in theory celestial maps could have guided the spatial relations between the individual constellations in the star-shaped frames, these latter are not arranged according to their relative positions in the sky nor according to their conventional order in medieval star catalogs.[22]

While the mantle displays religious and astronomical figures in roughly equal numbers, most of the religious figures are generic, repetitive, and smaller than the astronomical figures, which are all highly specific. This visual juxtaposition of unambiguous astronomy with vague religion is mirrored by the mantle's epigraphic program. Although the labels of the individual constellations were fundamentally altered in the fifteenth century, the inscriptions that relate to the garment's patrons, recipients, and functions have been preserved nearly unchanged. The largest inscription stretches around the length of the mantle's semicircular edge and acclaims an emperor Henry, glory of Europe ("decus Europae, cesar Heinrice"). The much smaller inscription directly above this invokes the mantle's astronomical decoration with "a description of the entire orb" (descripcio tocius orbis) and wishes peace upon its patron, one Ismahel ("pax Ismaheli qui hoc ordinavit"). The third inscription, set directly beneath the Majestas Domini, expresses the wish that this gift of an emperor might be pleasing for "supernal" (celestial or divine) use ("superne usye [=usu?] sit gratum hoc cesaris donum").[23]

Ismahel may be identified with the independently attested Melus of Bari, an Apulian noble who rebelled against the Byzantine administration in southern Italy, suffered a devastating military defeat in 1018, and took refuge in Henry's court. In 1020, Melus joined Henry and Pope Benedict VIII in Bamberg at Easter for a conclave on Italian affairs, at which Henry recognized him as the "Duke of Apulia." Thus honored, Melus died a few days later on April 23 and was buried with princely honors in Bamberg.[24]

The formula used in the mantle's inscription, "pax Ismaheli," implies that the patron, having commissioned the garment as a gift to his protector, died before it was completed. This would resolve the apparent contradiction with the description of the mantle as "cesaris donum," the gift of an emperor, not of Melus. Henry, it would seem, saw to the completion of his deceased subject's commission but declined to take it as his own, instead redirecting it to the cathedral at Bamberg.[25] The depiction of the two clerical saints and the inscription invoking "supernal use" may be small adjustments introduced in the course of the mantle's execution to render it more appropriate for an ecclesiastical context. Although Ismahel probably intended his gift as an imperial garment, it is unlikely that Henry ever wore it.[26]

The mantle's astronomical emphasis is by far its most idiosyncratic element.[27] If it formed part of Ismahel's planned gift, then the cosmic elements can be understood as a statement of fealty to the Ottonian emperor by a former Byzantine subject, a declaration of allegiance to the true cosmocrator. Henry's deflection of the gift to the church would then form a complementary gesture of humility, and an acknowledgment of the higher power by whose grace he ruled.[28] Indeed, members of the Ottonian court may have been uncomfortable with the very notion of cosmocracy. Liudprand of Cremona, in his acid account of the embassy he undertook to the Byzantine court in 968, relays his own retort to the emperor's claim that the Ottonians were "not Romans, but Lombards": "The annals record that fratricidal Romulus . . . made a refuge for himself where he welcomed defaulted debtors from foreign climes, runaway slaves, murderers, and people who deserved death for their crimes. . . . From this aristocracy there arose those whom you call *cosmocrators*, or emperors!"[29] Henry's deflection of his subject's gift to an ecclesiastical recipient may have served to avoid the reproach of "Byzantine" cosmocratic arrogance. Within a liturgical context, the astral decoration of the mantle will have gained new significance from the biblical description of the priestly robe of Aaron on which "the whole world" was depicted.[30] Even if its cosmic elements seem at first glance to outweigh the religious, the mantle ultimately found a more suitable home in church than at court.

To understand the Bamberg star mantle as a declaration of world rule by a single man flattens its dynamic potential to generate multiple meanings, as an unusual garment that demanded an explanation and provided several. It also misses the opportunity offered by the garment's historical inscriptions, namely, to trace the social relations that could be forged by a single extraordinary object.[31] In the course of its production, the mantle established connections between an Italian noble, a German emperor, and a newly established episcopal see— a set of relations that it thereafter reified and commemorated. It thus bound together aristocracy, court, and church in an unstable relationship, within which its cosmological iconography was activated in diverse fashions. If in the commissioning it was a pledge of allegiance, in the giving it became a gesture of piety and humility, before coming to rest as a priestly garment of biblical pedigree.

Although the astronomical decoration of the Bamberg star mantle may have been novel when it was commissioned, it soon attracted at least one imitation.[32] In 1022, while staying at the Abbey of Monte Cassino, Henry II was the beneficiary of a miraculous healing that he attributed to the monastery's founder, St. Benedict of Nursia.[33] In gratitude, he presented the monastery with a plethora of splendid gifts— either, as the chronicler would have it, on the day of the miracle, or, as more skeptical modern historians have proposed, over the following years. Henry's gifts included richly adorned garments and objects in precious metal, such as "a rather large silver Saxon chalice that Theodericus, King of the Saxons, had at one time sent to blessed Benedict."[34]

The cosmic garment, however, was not presented by Henry but by Pilgrim, the Archbishop of Cologne. Pilgrim had earlier served both as Henry's chancellor of Italy and as provost of the cathedral of Bamberg, where he must have encountered the star mantle.[35] After Henry's miraculous cure, he "offered to blessed Benedict an excellent purple chasuble adorned all around with gold apparels bearing the symbols of the twelve months" (planetam purpuream optimam, listis aureis mensium duodecim signa habentibus in circuitu adornatum).[36] The phrase "mensium duodecim signa," symbols of the twelve months, customarily refers to the signs of the zodiac.[37]

A correspondence between the months and the signs is found on another eleventh-century gift, which is no longer preserved but is depicted in an eighteenth-century painting of the reliquary of Anno, one of Pilgrim's successors as Archbishop of Cologne. The reliquary is surrounded by other objects associated with the sainted bishop, including a sword that, according to the painting's inscription, was given to him by Emperor Henry III (1046–1056). The sword's scabbard is divided into seven horizontal fields, each bearing a single image. That closest to the hilt shows an emperor, whom the inscription identifies as Henry. The remaining six show signs of the zodiac, and the inscriptions name the corresponding months: January for Aquarius, February for Pisces, and so forth.[38] Pilgrim's chasuble might similarly have paired celestial signs with the names of the months.

The Monte Cassino chasuble adopted the astronomical theme in more condensed fashion than the Bamberg star mantle, presenting the twelve signs of the zodiac in preference to the profusion of constellations found on its predecessor. However, the circumstances of its presentation resemble those of the earlier garment. It was given by a high-ranking churchman to an ancient monastery in gratitude for the cure of the emperor, thus binding together episcopal, imperial, and monastic actors. Like the Bamberg star mantle, it circulated in the immediate vicinity of the emperor and because of him, even if he did not wear it. The sword of Anno maintained the same pattern a few decades later, as a gift adorned with the constellations that both forged a connection between emperor and bishop and ultimately remained with the church. Thus one of the “unwritten rules” that governed the political decorum of early medieval Europe emerges: the zodiac was a suitable ornament for a gift given by or on behalf of an emperor to the church, but not for the imperial regalia.[39]

However, in the following century the librarian of Monte Cassino became the first of many subsequent scholars to look at one of these cosmic garments and imagine an emperor in it. Around 1150, Peter the Deacon wrote a text now known as the “Graphia-Libellus,” a compilation of antiquarian tidbits from Isidore of Seville, lurid accounts of the castration of eunuchs, and, of primary interest in the present context, an original treatise “on the imperial garments” (*De vestibus imperatorum*). Here we read that “the golden mantle of the emperor should have a golden zodiac [mantum aureum imperatoris habeat zodiacum aureum], made from pearls and precious stones.”[40]

The Graphia-Libellus is a work of the imagination that expresses Peter’s enthusiasm for the revolt of the Roman Senate and his hopes for a renewed Roman empire in which the church would play a diminished role.[41] But his imagination had been fired by the realia that surrounded him in the treasury of Monte Cassino, and his image of the emperor’s mantle with its golden zodiac was probably inspired by Pilgrim’s gift of the previous century.[42] For Peter, the purpose of the mantle, even in the realm of fantasy, was not to declare the universal rule of a single man, but to promote an idealized image of ancient Rome reborn. This was no cosmocracy, but a state in which senate and emperor would keep the popes in check.

Peter’s authorship of the Graphia-Libellus was soon forgotten, and those learned medievalists of the nineteenth and early twentieth centuries who read the text believed it to be considerably older. It was left to Robert Eisler to close the circle: in 1910 he cited the description of the imperial mantle from the Graphia-Libellus, which he dated to the reign of Otto III (996–1002), as evidence for the imperial use of the Star Mantle of Henry II.[43] Peter’s fantasy, inspired by an imitation of the Bamberg mantle, became its explanation.

To understand any of these three garments— the Bamberg star mantle, the

Monte Cassino chasuble, or the imaginary mantle of the Graphia— as declarations of the cosmocracy of a single individual would be to set one of many potential meanings above all the others. Perhaps, indeed, Ismahel intended to flatter Henry with a gift that declared him king of the world, but Henry knew how to handle such flattery: by deflecting it and converting it into the pleasing gift of a pious emperor. The Monte Cassino chasuble was neither given by Henry nor to him, but by a member of his inner circle to the saint who had healed him. In the following century, Peter the Deacon imagined a Roman emperor in a celestial mantle, not to declare his sole rule, but to strengthen the splendor of emperor and senate in the face of a too-powerful church. In all cases, the cosmic garment served not to declare the dominion of an individual, but to mediate between distinct sources of power— aristocratic, imperial, episcopal, and monastic.

CHARLEMAGNE’S SILVER TABLE

Both in its explicit depiction of the cosmos and its proximity to imperial power, the star mantle recalls a storied object from two centuries before: a silver table that belonged to Charlemagne and after his death continued to circulate in the Frankish court. The table is not preserved. Like many aspects of the Frankish emperor’s life, we owe its first mention to his biographer, Einhard, whose *Vita Karoli Magni* was written during the reign of Charlemagne’s son Louis the Pious.

Einhard’s *Vita* is divided into three parts of unequal length.[44] After a brief preface, in which the author explains his desire to protect Charlemagne’s memory from oblivion, the second part begins with the fall of the Merovingian dynasty, the rise of Charles Martel, and the acclamation of his son, Charlemagne, as king of the Franks. Accounts of Charlemagne’s wars and diplomatic efforts, his activities as a patron of architecture, and his character and domestic life follow. To Einhard we owe the memorable images of the king’s appearance (broad and sturdy, handsome and composed, thick-necked and potbellied), his love of swimming, and his intellectual pursuits: for Charlemagne devoted as much time to learning as to war. His teacher (and Einhard’s) was Alcuin of York, “the most learned man in the entire world,” with whom Charlemagne “learned the art of calculation and probed with acute exertion and great curiosity the course of the stars.”[45] Einhard provides a brief account of his king’s coronation as emperor in Rome, before describing his illness, death, and burial in January of 814.

The third and final part of Einhard’s *Vita* gives the text of Charlemagne’s will.[46] In 811, the 69-year- old emperor summoned bishops, abbots, and counts (the representatives of church, monastery, and aristocracy) to the reading of his testament. Charlemagne decreed that his goods be divided into three parts, two of which were immediately distributed among the twenty-one metropolitan sees of his kingdom. The final third was to provide for him until his death, at which time all that remained would be divided into quarters. One quarter would be distributed to the same twenty-one sees, one to Charles's descendants, one to the palace servants, and one to the poor.

Three groups of objects were singled out for special mention. The chapel treasury at Aachen was to remain undisturbed, while the imperial library would be sold off and the proceeds given to the poor. The third group consisted of four tables: "three silver tables and a gold one of great size and weight." One table bore a picture of the city of Constantinople, and was to be given to the Bishop of Rome, while the table with a picture of Rome was to be given to the Bishop of Ravenna.[47] The two tables thus augmented the shares already pledged to those sees and elevated them above the other nineteen metropolitans. However, Charlemagne "decided that the third [table], which outstripped the others by far in the beauty of its workmanship and its sheer weight and contained a representation in careful and tiny drawing of the whole world in three connected circles [ex tribus orbibus conexa totius mundi descriptionem], along with the fourth, namely the gold one, should be added to the third part, for his heirs and for those who would share alms."[48] The last two tables were simply added to the mass of objects that was to be divided and distributed following Charlemagne's death. Although singled out for mention, they were nevertheless meant to be melted down.

With this strange coda, the text of the will ends. Einhard appends the list of signatories and adds a single concluding remark: "After he had looked over this short document, Louis, [Charlemagne's] son who succeeded him on God's command, took care to fulfill with the greatest devotion all these things as soon as he could after his father's death."[49] All things, that is, except for the clause about the table. For in a biography of Louis composed by Thegan, chor bishop of Trier, we read that when Louis moved to the palace, he asked to be shown his father's treasures, which he then distributed according to the terms of his will. He went against his father's testament on one point only, "reserving nothing for himself besides one silver table that was triple in form, like three shields joined together as one [triformis . . . in modum quasi tres clippei in unum coniuncti]. He kept it for himself out of love of his father, but even so, he compensated for it with another valuable item that he donated on behalf of his father."[50]

Thus the table was not melted down and distributed among Charlemagne's heirs but was kept intact in the treasury at Aachen. There it appears once more, after Louis's death, in an account of the civil war that broke out between his sons in the year 842. The relevant section of the *Annals of St-Bertin* was written by a partisan of Charles the Bald, and its bias against his brother Lothar is clear.[51] For Lothar, in retreat from Aachen, "took all he could from the palace . . . and from the palatine chapel of St-Mary and from the royal treasury, including a silver plate [disco . . . argento] of wonderful size and beauty. On it there shone an engraved image of the whole world, and it also showed the stars and the various movements of the planets at proportionate distances from each other, with the more important signs [orbis totius descriptio et astrorum consideratio et uarius planetarum discursus, diuisis ab inuicem spatiis, signis eminentioribus]. Lothar had this great plate cut up into pieces and distributed amongst his men— who despite being induced by such a large bribe, still continued to desert in droves from every section of his army."[52]

These three texts must describe the same object.[53] All ascribe to it the same material (silver), the same form (round), and the same location (Aachen). Moreover, Einhard and Thegan agree on its tripleness ("three connected circles"; "triple in form"), and both Einhard and the *Annals of St-Bertin* report its great size and cosmological iconography. By combining all three, we can form a reasonable account of the object's appearance. It was not a square, four-legged sort of table, but a round object like a plate that could be set on a tripod.[54] Its composition was structured by three circles, which may have been joined like a clover leaf or set one inside the next.[55] The *Annals of St-Bertin* strongly suggests the latter, naming three iconographic components (a representation of the earth, the planets, and "the more important signs," presumably those of the zodiac) that only make sense if arranged in three concentric circles. The resulting image may have resembled a miniature from a famous manuscript of Aratus's poem produced during the reign of Louis the Pious and preserved in Leiden (see fig. 76).[56] This depicts the ring of the zodiac on the outside, a personification of the earth at center, and the orbits of the planets in between. The reference to the even spacing between the planets on the silver table might denote a more schematic depiction, like that found in a ninth-century Byzantine manuscript now in the Vatican (see fig. 69).[57]

Although these three texts allow us to imagine the table's appearance, their authors were not primarily concerned to describe it for posterity. Instead, the table provided each of them with an opportunity to speak indirectly about the fate of the Frankish state in the decades following the death of Charlemagne.

This function is most obvious in the *Annals of St-Bertin,* in which the table's destruction "symbolized destruction of political and familial order."[58] A corresponding function in the account of Einhard is less obvious, in part because of modern uncertainty regarding the *Vita*'s date of composition. Some scholars place it early in the reign of Louis the Pious, and see it as a defense of the legitimacy and regularity of his succession, while others set it late in the 820s and see it as an ambivalent text, written out of frustration at the failures of Louis's reign and hope that the next generation might learn from the example of Charlemagne.[59] A third option is to see the text as "neutral" praise of Charlemagne, written perhaps for the benefit of the young Charles the Bald.[60]

At the crux of the problem stands the fate of Charlemagne's grandson Bernard. In 806, Charlemagne foresaw the division of his kingdoms between his three sons: Louis, Pippin of Italy, and Charles the Younger. However, by 811, when the will reproduced by Einhard was made public, both Pippin and Charles the Younger had died, and the bulk of the kingdom was destined for Louis alone. Einhard explicitly mentions the one exception: "The king showed a special mark of his affection for [his grandchildren] when, after the death of Pippin, he ordered that his grandson [Bernard] should succeed his father" as king of Italy.[61]

After Charlemagne's death, Louis at first confirmed his nephew's rights, but in the *ordinatio* of 817 he moved to restrict them. Bernard took defensive actions against the perceived threat, such as closing the Alpine passes, which were interpreted by Louis as acts of aggression. Bernard traveled north and surrendered, but he was tried for treason in Aachen in 818. Louis commuted the initial death sentence, but Bernard was still blinded and died from the trauma. While court historians represented the events as the inevitable result of Bernard's "rebellion," other ninth-century sources portrayed Bernard as the guiltless victim of intrigue, and his death as the murder of an innocent. In 833, the death of Bernard ranked high on a list of Louis's sins compiled by a committee of bishops.[62]

Even if Einhard wrote the *Vita* before 818, his unambiguous statement of Bernard's rights to Italy soon testified to Louis's abrogation of the same. So too for the table. According to Einhard's text of the will, it was merely one of many precious objects that were to be divided up among Charlemagne's heirs. It gained its distinction only after Charlemagne's death, when Louis chose to keep it for himself. The actual fate of the cosmic table, not mentioned by Einhard but surely known both to him and to his courtly readership, contradicts his concluding statement, a few sentences after his account of the table, that Louis fulfilled the terms of the will "with the greatest devotion."[63] Einhard's explicit mention of the table forms both an implicit caveat to his assertion of Louis's fidelity, and a parallel to the far more consequential matter of Italy and the violent dis-inheritance of Bernard.

Louis's biographer Thegan takes pains to present the retention of the table as a legitimate act: "He kept it for himself out of love for his father, but even so, he compensated for it with another valuable item that he donated on behalf of his father."[64] Compare Thegan's account of Louis's reaction to Bernard's death: "The emperor . . . wept with great sorrow . . . and he confessed in the presence of all his bishops, and on their judgment he did penance for this reason alone: he did not prevent his advisers from executing this disfigurement. As a result, he gave a great deal to the poor for the cleansing of his soul."[65] In both cases, Thegan plays the apologist, explaining that while Louis's motives were blameless, he nevertheless provided fitting compensation for his deeds.[66] In both Thegan and Einhard, the fate of the table parallels the fate of the Frankish state and illustrates the gap between Charlemagne's plans and Louis's actions.[67]

Thus for the historians, the table acquired significance through transaction, in those moments when it passed from one owner to another. The silver table with its cosmic ornament shadowed the kingdom, from its division as intended by Charlemagne, through Louis's seizure of its entirety, to its destruction after his death, the ultimate violent fulfillment of the *divisio mensae et regnorum* that Charlemagne had wished to accomplish peacefully.

What of the table's function during Charlemagne's life? Just as the star mantle has been understood as a declaration of cosmocracy on the part of Henry, so too have modern historians seen the silver table as a declaration of cosmocracy on the part of Charlemagne, "an obvious symbol of Imperial universalism."[68] In truth, however, we know nothing of its use by Charlemagne: whether, for example, it traveled with his court or appeared beside him upon transaction of official business. We do not even know if the table was an imperial commission from a contemporary workshop, or an older object that arrived in Charlemagne's possession by other means. An ancient relative to the silver table is described by an epigram on a silver dish in the *Greek Anthology,* on which the moon and the sun were represented at the center, while the signs of the zodiac and the planets stood outside.[69] Such heirlooms had ample opportunity to reach Aachen, for example in the wagonloads of gold and silver, "the treasure of earlier kings, laid up over a long series of centuries," that Charlemagne's armies sent back from the defeated Avars in the years 795 and 796.[70]

Even if the table had been commissioned by Charlemagne, the possession of such an object was not a royal prerogative. The central element of Charlemagne’s table, a “map of the whole world,” was also depicted on a table commissioned by a one-time habitué of his court, Bishop Theodulf of Orléans.[71] Lines from the poem in which Theodulf describes the table are inscribed across a world map in a manuscript of the eleventh century (figs. 22 and 23).[72] Both the image described in the poem and the image depicted in the manuscript are purely terrestrial. However, another poem of Theodulf’s describes a “disc . . . fashioned in the image of the world” that depicts the signs of the zodiac and the seven planets.[73] Kings did not have a monopoly on images of the world, which could also be commissioned and celebrated by non-royal elites.

XL IIII [illegible]

Specimen terre quã oecumenen appellam̃ diuiditur inpartes tres. Et europa. una pars dicit̃
altera asia. Lybia tertia. Cuius longitudo ẽ aboriente inoccidente milia passus |c| I latitu
do abtoribus ethiopie regionis meridiane usq. adpartẽ septentrionalẽ sarmatię litorum
milia passus. |L| [illegible]. Ex quib. europa finit̃. Afreto maximo quẽ int̃ hispaniã et
mauritaniã usq. adhostia fluminis tanais et lacũ meotem. hoc litus patet milia
passus. |LXX| [illegible]

Item asia finit̃ abeuropa simit̃ eodẽ flumine et albia ostia fluminis nili q̃d ap
pellat̃ heracleoticũ pomẽm litus maris rubri et litorum milia passus |ccc| [illegible]

Quia ergo uniuersa spatia reddidimus nunc stuertamur adsingulas
regiones et fines inter se et quib; continentur spatiis.

Hispania quã quidã appellant hiberiam patet incircuitu milia
passus |XXX| [illegible] VIIII.

Gallię utręq. comata et bracata inunũ incircuitũ patent
milia passus |X| [illegible]

Italia tota palpes flumenq. arsiam plittora patet milia
passus |XX| [illegible]

Retia et uindelicia utręq. incircuitũ inunũ patent
milia passus [illegible]

Germanię utręq. proxima galliet et senonica pa
tent incircuitũ milia passus |XXX| [illegible].

Sarmatia omnis aflumine uistula pque histrum
flum̃ et littora ponticimaris et ex parte caspia et or
septentrionalis incircuitũ patent milia passus
|X| [illegible]

Thracia et greca inunũ patent milia passus
|X| dclxxviiii

Moesia psae in[illegible]cuitũ patent milia pass̃ ccclxxv
Macedonia omnis idem incircuitũ patet milia pass̃
|X| [illegible]

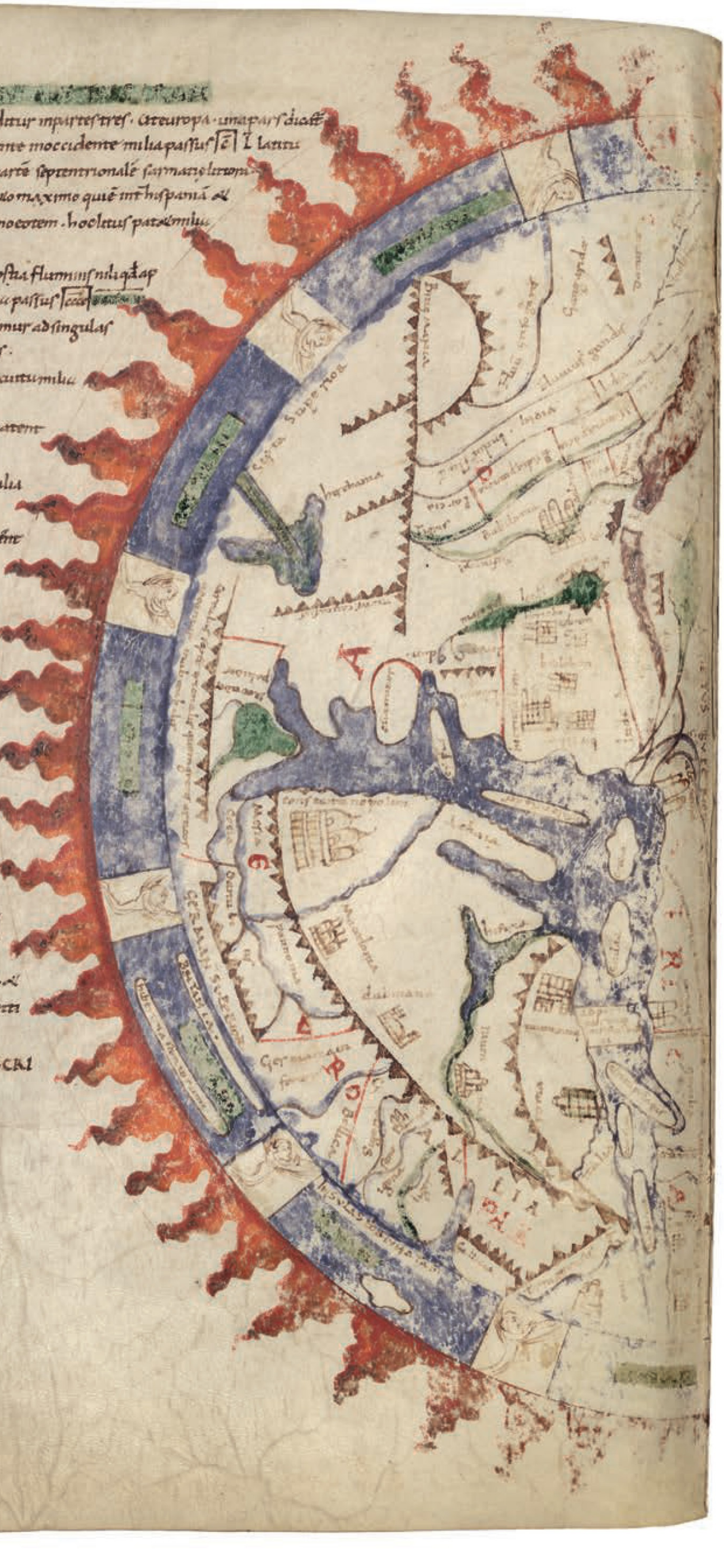
Illiricũ p̃s incircuitũ patet milia passus |X|
[illegible]

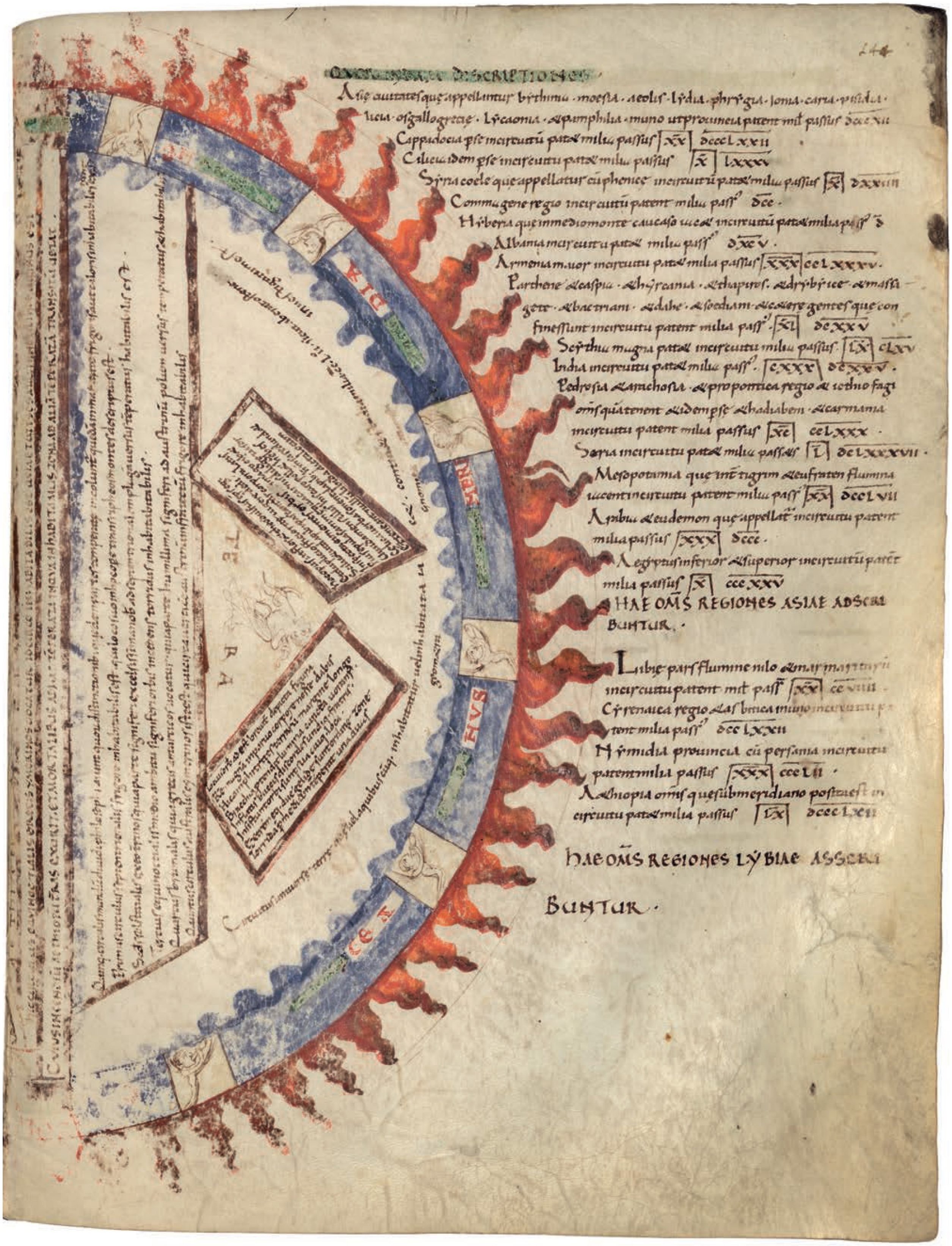
Pannonia p̃sae incircuitũ patet milia passus |X|
dcccc LXVII

Peloponessus tota inqua achaia ẽ elea. et asiana. et
laconice et arcadia et argia. incircuitũ p̃ oram marti
ma patent milia passus [illegible]

[illegible] EUROPAE ADSCRI

BUN TUR




144
TE
R
A
HAE OMS REGIONES ASIAE ADSCRIBUNTUR.
HAE OMS REGIONES LYBIAE ASSCRIBUNTUR.

FIGURES 22 AND 23

Map of the terrestrial globe. Encyclopedic miscellany. Ripoll, 1055–1056. 36 × 28 cm (full folio). Vatican City, Biblioteca Apostolica Vaticana, Reginensis latinus 123, fols. 143v and 144r. © 2017 Biblioteca Apostolica Vaticana.

This point is reinforced by a gift sent by Charlemagne himself to Alcuin, his tutor in astronomy. After Alcuin moved to Tours in 796 to assume an abbacy, his royal pupil continued to pester him with letters requesting explanations of astronomy and the reckoning of time. The reconciliation of the lunar and the solar years was a matter of primary concern, on which Alcuin soon came into conflict with a new cohort of courtly advisors. Charlemagne put great stock in Alcuin's advice, and in 798 he rewarded his teacher with a series of four gifts inspired by the biblical account of the first four days of creation. Alcuin's letter of acknowledgment is preserved, to which we owe the description of the dish: "On the fourth day, when the glorious sun and the stars were set in the heavens, a bright round sun-like object was brought me to adorn my table, having twenty-seven semicircles, which if drawn twice will make fifty-four to match the hours of the moon's course through each sign [per singula signa], and a round circle in the center for the endless roundness of the sun."[74]

This was already an abstruse gift, and Alcuin's description renders its significance even more obscure. As Charlemagne (or his advisors) will have read in a standard text by the Venerable Bede, the moon takes twenty-seven days plus eight hours to make a complete circuit through the zodiac.[75] Alcuin passes over this straightforward explanation for the number of semicircles, and points out instead that twenty-seven is half the number of hours that the moon takes to pass through one of the signs of the zodiac. The remark is consistent with Alcuin's broader purpose in the astronomical correspondence: to instruct Charlemagne in the numerical harmonies that underlie the motion of the planets, through which we recognize the elegance of God's creation.[76] Thus the numerical commensurability of various cycles is of more than merely practical import.

Later in 798, Alcuin sent to Charlemagne another letter, which included an image ("figura") meant to explain the courses of both the sun and the moon through the zodiac.[77] The manuscripts of Alcuin's letters do not preserve the image, but it may find an echo in a miniature from a manuscript produced in Salzburg twenty years later (fig. 24).[78] The twelve signs of the zodiac have been confidently drawn in the outermost ring. The next ring, which displays a series of relationships between one white and one black circle, has been understood as a depiction of the 24 hours of the day, while the third ring from the outside, depicting a single disc that progressively shifts from all black to all white and back again, may represent the phases of the moon.[79] The central inscription announces the diagram’s intended subject: *cursus solis et lunae per signa singula*, the course of the sun and the moon through a single sign.

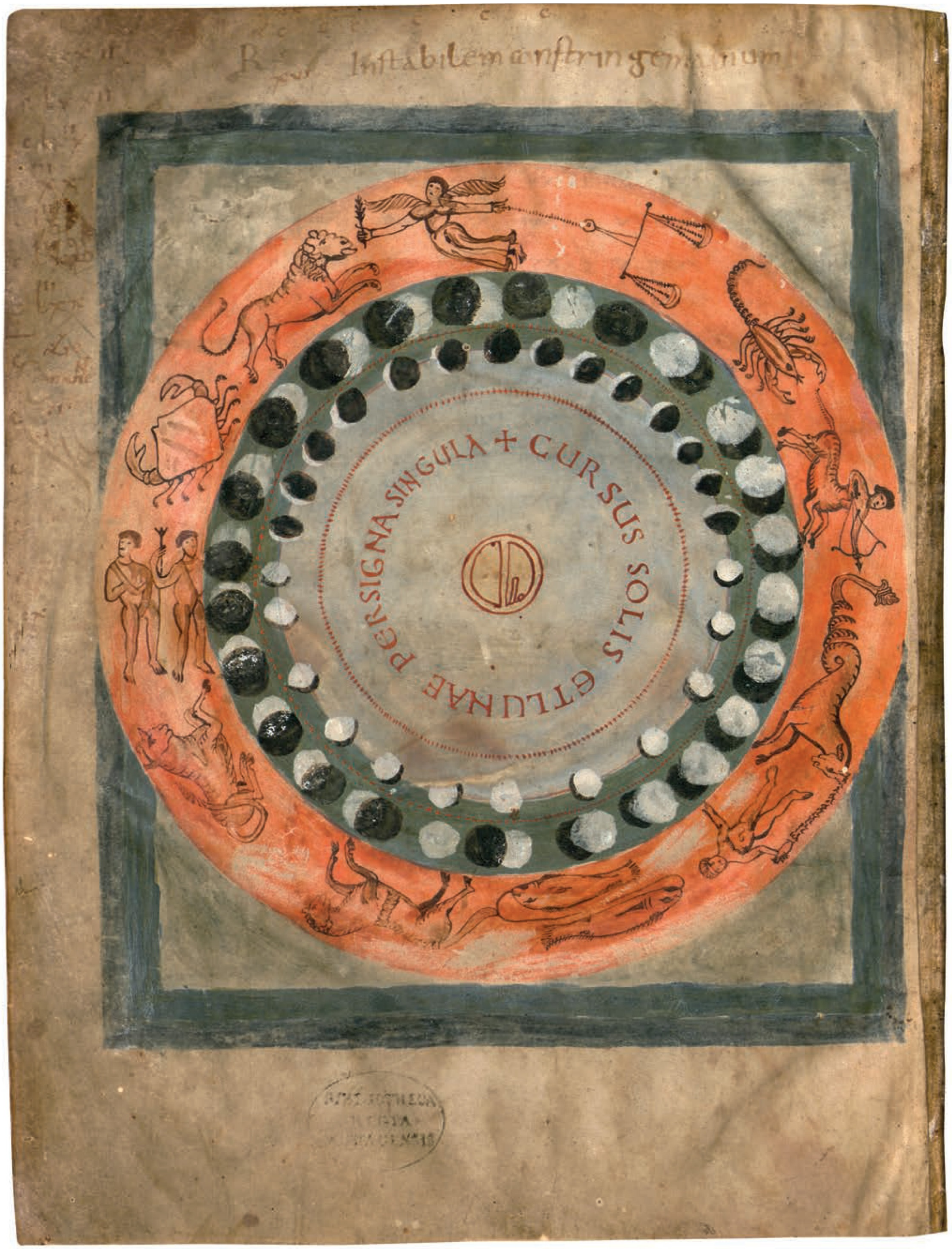

+ CURSUS SOLIS ET LUNAE PER SIGNA SINGULA

FIGURE 24
Diagram with the zodiac. Collection of astronomical-computistical and natural-scientific texts. Region of

Salzburg, 818. 32 × 23 cm (full folio). Munich, Bayerische Staatsbibliothek, Clm 210, fol. 163v.

These words bring us back to Alcuin’s description of the dish that he received from Charlemagne, which invoked the course of the moon *per singula signa*. Perhaps the *figura* that Alcuin appended to his letter was intended as an improvement upon the design of the initial gift, or as a more advanced lesson. We know that Alcuin considered images to be useful for teaching astronomy. Thus in yet another letter sent from Tours, Alcuin describes to Charlemagne his efforts to set up a school in Tours. “I am busy carrying out your wishes and instructions,” he writes, “giving some the honey of holy scriptures, making others drunk on the old wine of ancient learning, beginning to feed others on grammar; and some I am overjoyed to enlighten on the arrangement of the stars as if painted on high in some great man’s house.”[80]

Taken in isolation, it would be possible to see Charlemagne’s gift to Alcuin as a statement of cosmocracy, of his ability to dispense the world as if he were its creator. Alcuin, however, took it as a teaching opportunity. Given the frequency and intensity with which Charlemagne questioned his advisors about the motion of the stars, this is also the more obvious context in which to imagine the silver table’s function at his court: as an aid to the astronomical discussions that the king regularly initiated.[81] Its potential political valences were fully activated after Charlemagne’s death, when its historiographic representations tracked the vagaries of the Frankish state. In both cases, the table gained its significance not in a declarative fashion, as an assertion of a state of affairs, but rather through transactions, between a ruler and his advisors on the one hand, and between generations of rulers on the other.

QUSAYR ʿAMRA

The transactional use of explicit cosmological imagery to political ends was not unique to early medieval Europe but was also found in the princely arts of early Islam, most notably in the frescoes of Qusayr ʿAmra. This complex, which consisted in its core of a reception hall and bath, is located in the semi-arid steppe lands known to the classical Arabic geographers as al-Balqaʾ, some sixty kilometers east of Amman. Today, Qusayr ʿAmra is far from any settlement and visible from a distance despite the unassuming hues of its locally quarried basalt and limestone (fig. 25).[82] The site’s natural advantages compensate for its isolation: the seasonal river on whose banks the building was constructed, and the deep well that stands outside its entrance, marked in the early nineteenth century by “four white marble columns, which support a vaulted roof.”[83] Indeed, for over a millennium before Qusayr ʿAmra’s early twentieth-century “discovery” and publication by Alois Musil, the building served as a way-station along a primary route linking Syria and Arabia.[84] According to the tenth-century geographer Muqaddasi, this route was used to carry the post in the Umayyad era, when communication between the empire’s political hub in Damascus and the holy cities of Mecca and Medina was especially crucial.[85] “Amri” appears as a well-watered resting point on Ottoman itineraries, and numerous traders scratched mementoes of their stays into the frescoes inside.[86] We owe the first mention of the site in European scholarly literature to one such trader, Yusuf al-Maliki, who in 1806 told the geographer Ulrich Seetzen of a domed structure “in which gazelles, foxes, hares, and other animals are said to be painted in bright colors.”[87]

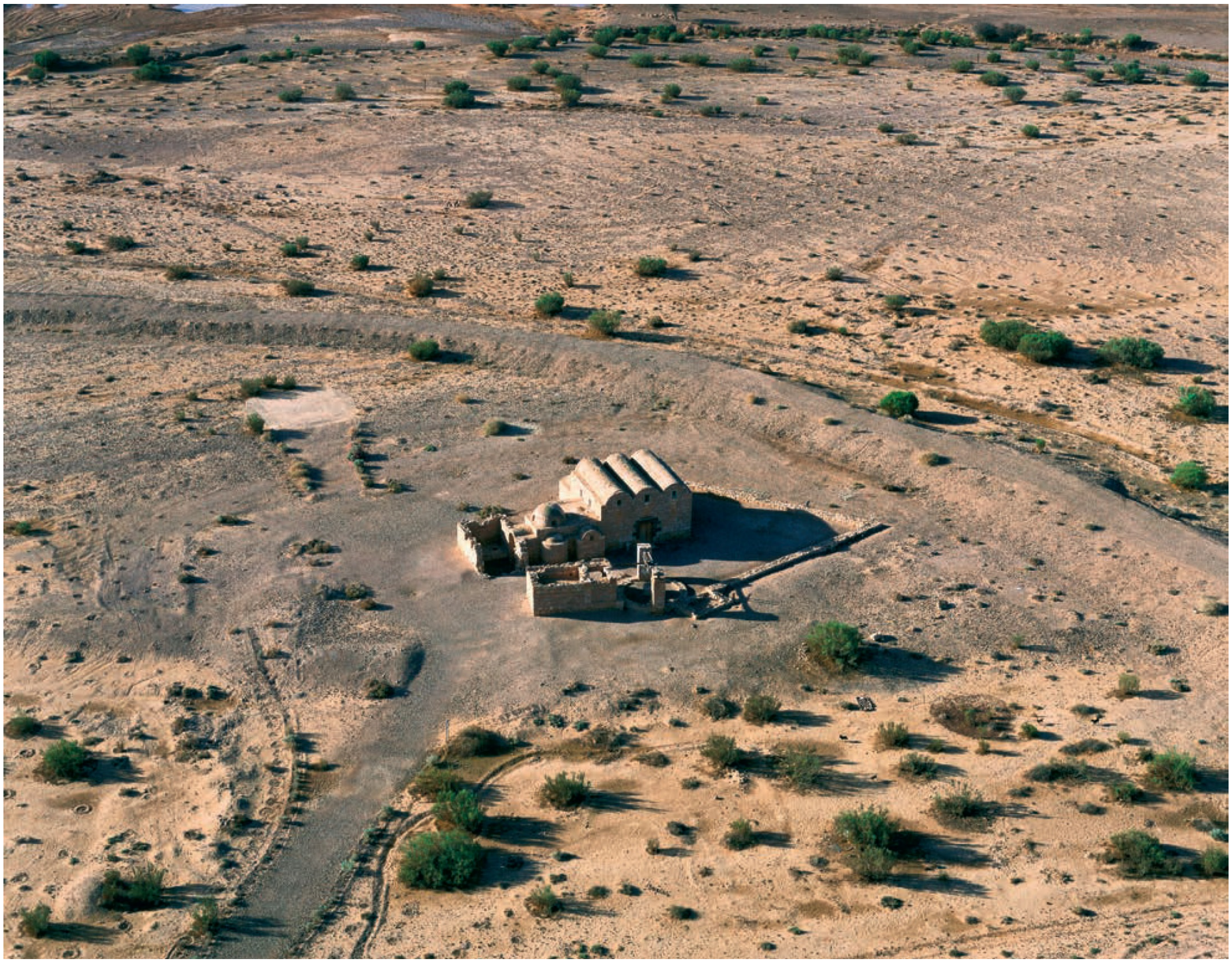


FIGURE 25
Qusayr ʿAmra, exterior. Early 8th century.

Now as then, the site’s primary glory is the painted decoration of the interior. The visitor who passes through the lone door in the northern wall enters a reception hall composed of three barrel-vaulted aisles and saturated with frescoes of extraordinary iconographic variety (fig. 26).[88] Complicated multifigure compositions depict courtly entertainments (dancers and acrobats, the hunt and the attendant slaughter), a series of individually framed vignettes depicts the construction of a building (perhaps of Qusayr ʿAmra itself), while at back of the niche facing the entrance an enthroned figure (perhaps the site's patron) is flanked by two attendants bearing fly whisks. Other elements are more high-minded. Three personifications on the south wall of the east aisle are labeled in Greek as depicting Skepsis, History, and Poetry, while their pendants at the southwest have been recently identified as the prophets Jonah and Job.[89]

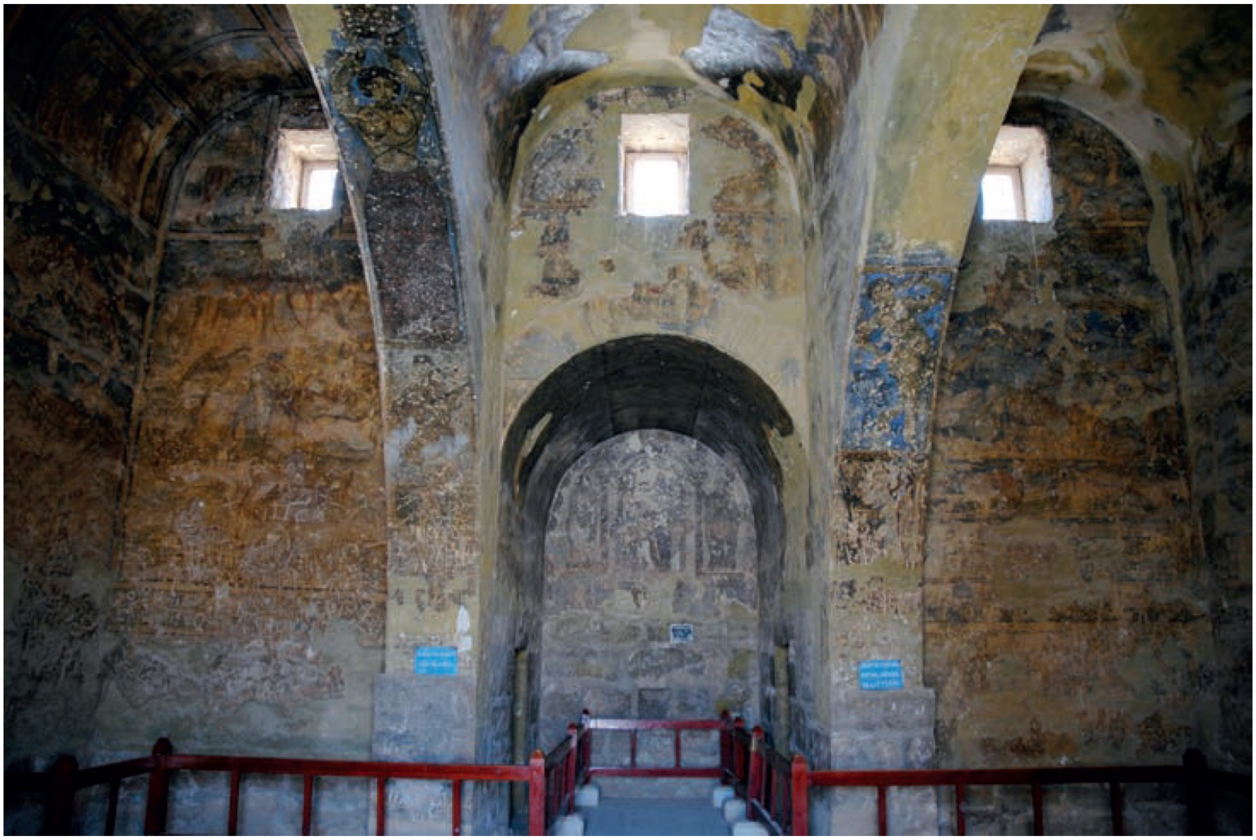
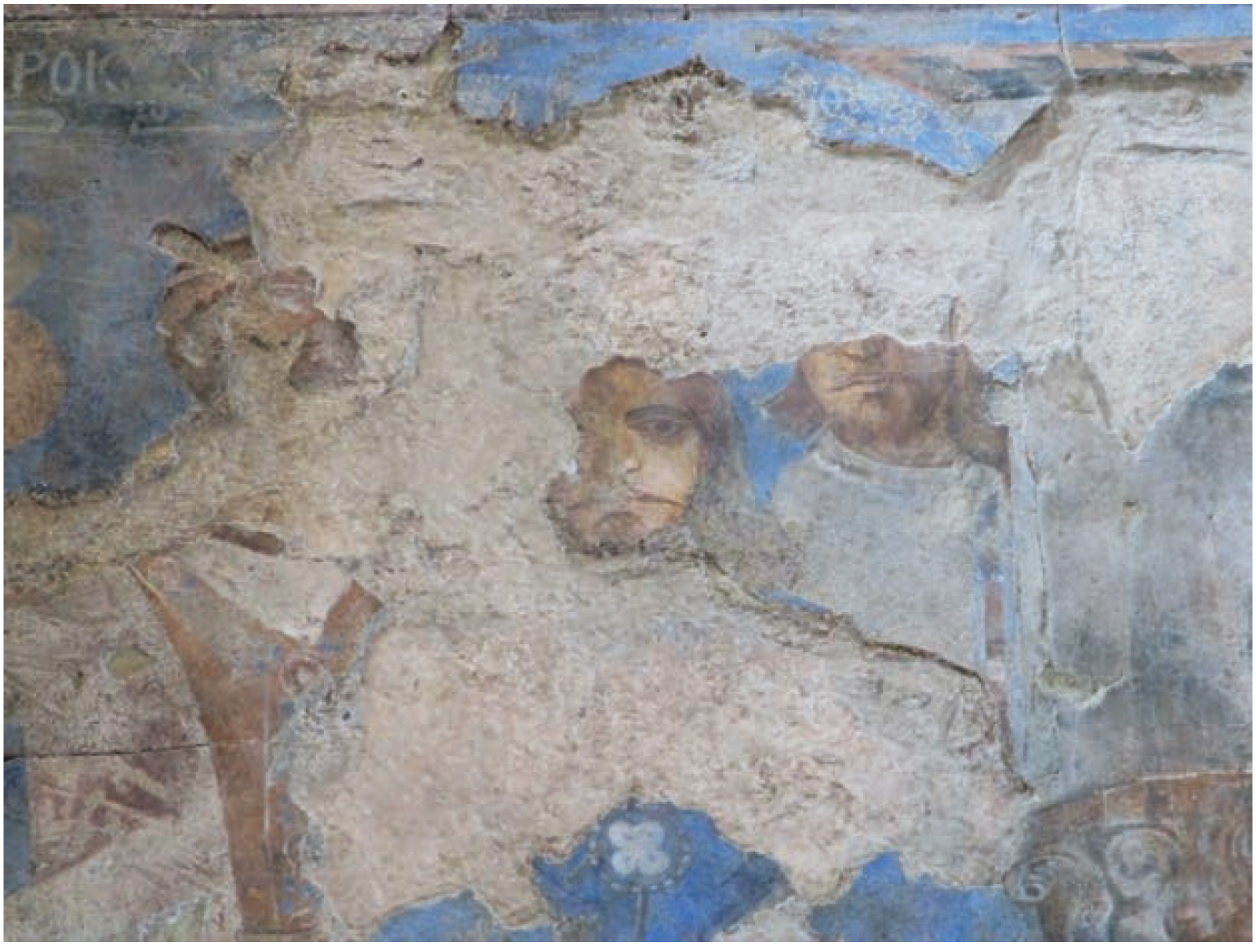


FIGURE 26
Qusayr ʿAmra, reception hall.

For a century, the site's fame has rested on this iconographic diversity, but a recent campaign of conservation, which at my last visit had covered only the paintings of the western aisle, has removed centuries of soot and overzealous restoration and revealed the exceptionally skillful execution of the frescoes.[90] Nowhere is this more evident than in the scene at the south end of the west wall known in the scholarly literature as the "six kings" (fig. 27). The panel presents two rows of three standing figures each. The extant inscriptions in Arabic and Greek, portions of which were removed by Musil and are today in Berlin, identify the leftmost figures as the Byzantine Emperor, the Visigothic King Roderic, the Sasanian Shah Khosrow, and the Negus of Ethiopia.[91] The painting is rife with ambiguities and anachronisms, and interpretations vary widely: is this a declaration of triumph, indeed of cosmocracy, on the part of the Umayyad caliphs, or an image of an international community of sovereigns within which the Umayyads claim membership?[92] The iconographic mystery is joined by a stylistic puzzle. If discussions of the site's paintings treat them as direct descendants from late antique styles and themes, the faces of the two anonymous "kings" at right are both arresting and utterly unfamiliar, the assured work of masters who have left no other trace in the archaeological record (fig. 28).

While the restorations have generated some new puzzles, they have also resolved the long-standing question of the building's patronage. A previously illegible three-line Arabic inscription at the top of the southern wall of the western aisle, above and between the two prophets, now yields an unambiguous acclamation: "O God, make al-Walid ibn Yazid virtuous the way you did with your pious servants!"[93] The object of these good wishes, whom many scholars had hypothetically associated with the site, ruled as caliph for a brief time between 743 and 744, but he is not given the caliphal titles here or in the building's other inscriptions that invoke an unnamed emir. The complex thus seems to have been built during the reign of his uncle and predecessor, Hisham ibn ʿAbd al-Malik (724–743).

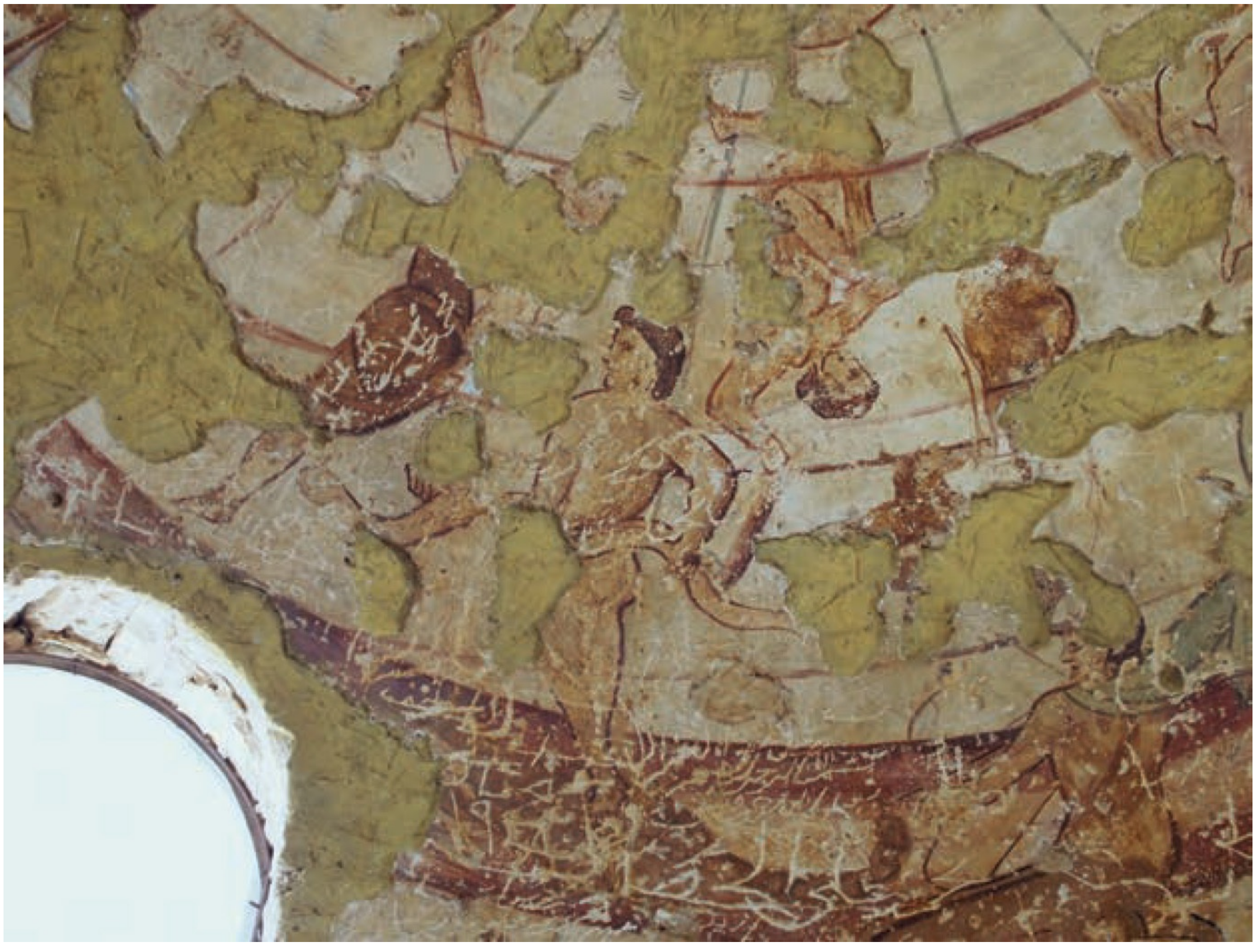


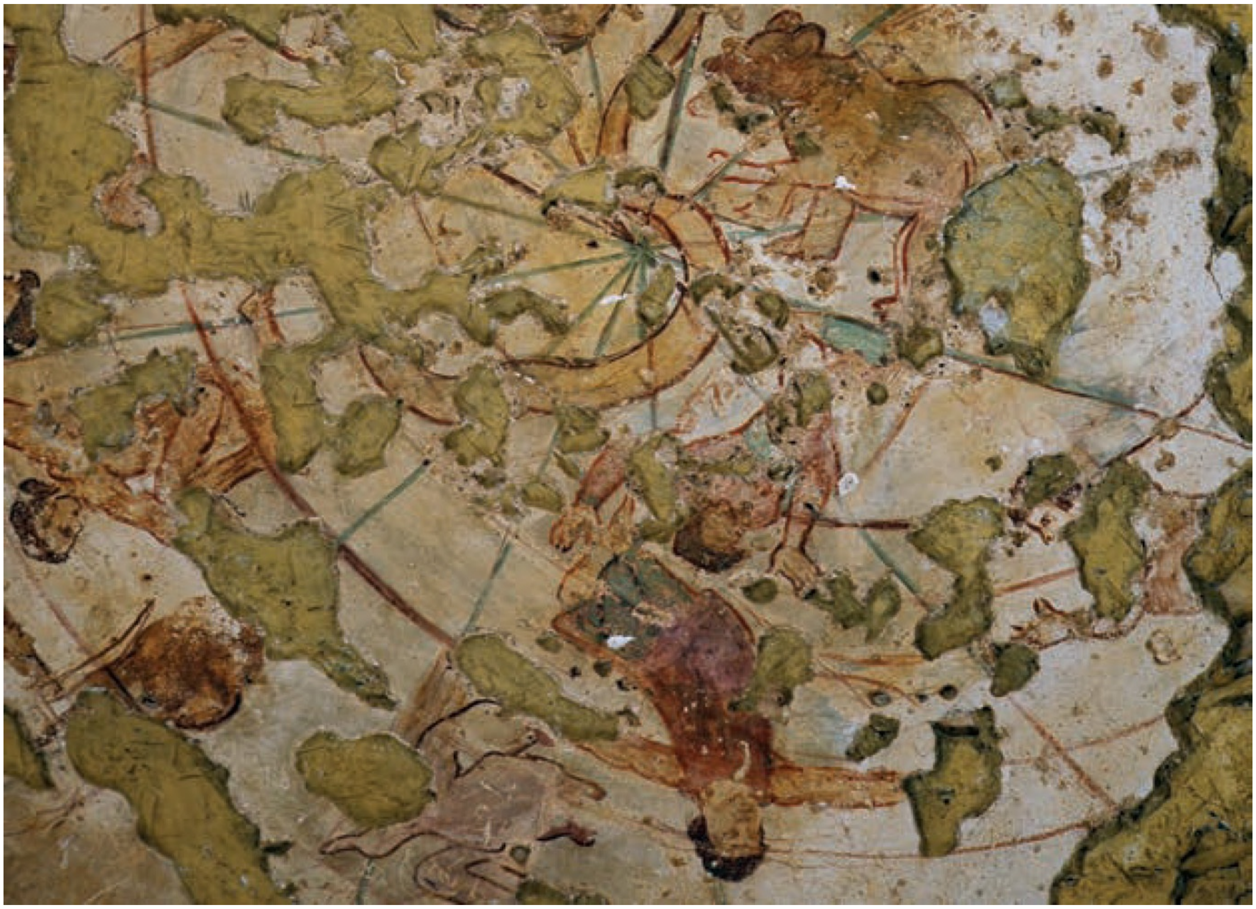
FIGURES 27 AND 28
Qusayr ʿAmra, reception hall, fresco with the “six kings.”

The reception hall would have served as a fitting site for the emir’s audiences. After the formal sitting had concluded, the company could pass through the door in its eastern wall into the bath that was fed by the well outside. This comprises three chambers, which may be understood by analogy to Roman baths as an apodyterium (changing room), tepidarium (warm room), and caldarium (hot room). These too are decorated with frescoes, the first with vignettes of animals, and the second with scenes of bathing women. The third is crowned by a dome, which is pierced by four windows and covered with frescoes that represent some “35 of the classical 48 Ptolemaic constellations,” with the zodiac marked off by a red band (see fig. 18). Although painted on the concave interior of the dome, the constellations are arranged as they would appear on the convex exterior of a celestial globe. Some such globe, or a two-dimensional representation of a globe like those on the star mantle, may have served the painters as a model.[94]

Large areas of plaster have fallen from the dome to reveal the irregular masonry and mortar beneath, disturbing the composition’s coherence and hindering comprehension of its original impact. Still, the off-center circles original to the frescoes, including but not limited to the band of the zodiac, must always have produced a dis-orienting and vertiginous effect. Furthermore, while certain constellations, such as Boötes, the herdsman, stand on firm ground (fig. 29), others, such as Andromeda, are depicted in free-fall, as if plummeting to the floor of the bath (fig. 30). These recall the rider in one of the hunt scenes of the reception hall who is depicted falling from his horse.[95] Even the double sawtooth pattern that marks the base of the dome undercuts its solidity and contributes to an effect both dynamic and precarious.

Most interpretations of these frescoes, like those of the complex as a whole, have focused on the figure of al-Walid. As with all the early caliphs, we know him mostly through the eyes of ʿAbbasid historiographers hostile to the Umayyad dynasty in general and to al-Walid in particular, whom they depict as profligate, irreligious, and given to worldly pleasure.[96] The image is reinforced by the tenth-century anthology of al-Isfahani, which includes poems attributed to al-Walid and anecdotes about his life.[97] This material has proven irresistible to modern scholars. Robert Hamilton, one of the excavators of Khirbat al-Mafjar, a Palestinian site that has also been associated with al-Walid, developed a fascination with the figure of the prodigal caliph, publishing a monograph in which “Walid” fully inhabits the role of the pleasure-loving oriental tyrant, and the extant buildings become stage sets for his debauches. Thus, in Hamilton’s account, two interconnected tanks at Khirbat al-Mafjar become the prince’s “wine bath” into which he leapt naked, drinking up the contents until he fell unconscious and had to be extracted by his servants.[98] As difficult as it might seem to reconcile the celestial dome of Qusayr ʿAmra with the figure of the decadent prince, the effort has been made. For one scholar, inspired by tales of al-Walid’s apostasy from Islam, the frescoes provided a backdrop for initiation into pagan mysteries.[99] For another, the act of placing “celestial imagery over the medieval equivalent of a hot tub” revealed al-Walid’s “bizarre sense of humor or over-eager imagination.”[100]





FIGURES 29 AND 30
Qusayr ʿAmra, caldarium, cupola, frescoes with Boötes (top) and Andromeda (bottom).

Such interpretations obscure the practical functions of Qusayr ʿAmra and the other "desert castles" built by members of the Umayyad family. These served not only as way stations on the well-trafficked routes between Damascus and Mecca but also (and perhaps above all) as sites for meetings and negotiations between representatives of caliphal authority and local elites.[101] Inscriptions carved into the stucco at the nearby site of Kharana record the results of such negotiations and are signed by another, slightly earlier, Umayyad prince who served as governor of the province, ʿUmar ibn al-Walid.[102] Despite their apparent isolation, these sites were nodes in networks of state authority. They allowed members of the reigning family to maintain contact with their supporters and thus to exercise a form of itinerant power.[103]

A verse panegyric addressed to al-Walid ibn Yazid by Farazdaq, whose poem on the Damascus mosque we have already encountered, conjures one of these gatherings at a site very similar to Qusayr ʿAmra.[104] "How excellent is the station where the people have their camels kneel," the poet declaims. "They set down their saddles by the dome whose celestial canopy towers above al-Walid. It was Abu l- ʿAsi, Marwan, and Yusuf who built it over him. Its structure has risen to embrace the stars."[105] In the poem, the celestial dome marks the place where al-Walid receives his clients. The names invoked give the grounds of his dynastic authority: Marwan was the patriarch of the branch of the Umayyad family to which al-Walid belonged, and Abu l- ʿAsi was the grandfather both of Marwan and of the caliph ʿUthman, whose murder the first Umayyad caliphs claimed to avenge. For the poet, the figure of the celestial dome stands for the unity of the Islamic community as guaranteed by dynastic succession from Marwan.

However, the emir's clients could only tolerate so much high-flown dynastic rhetoric before the business of entertainment began. Taking Qusayr ʿAmra seriously need not entail dismissing the tales of Walid's drinking parties. In patriarchal societies, alcohol and saunas have never hindered the formation of social bonds or the transaction of political business. If we imagine the emir conducting business with local clients while having a soak under the caldarium's cosmic canopy, then the frescoes will have served a reminder that the outcomes of their discussions had global consequences. Alternatively, the frescoes' plummeting figures and elements of instability might have evoked the precariousness of social standing in a society based upon patronage, just like the rider who falls from his horse in the reception hall.

Like the star mantle and the silver table, the celestial dome of Qusayr ʿAmra was appropriate to political ends. A bath would indeed be an absurd location for a declaration of cosmocracy, but is well suited to the types of informal political transactions through which political bonds are solidified. Although the dome could not, like the mantle or the table, circulate along networks of political authority, it did mark a site at which such networks were formed and confirmed.

COSMOCRATS AND ITINERANT KINGS

The Bamberg star mantle, Charlemagne's silver table, and the cupola frescoes of Qusayr ʿAmra exemplify the deployment of explicit cosmological imagery in courtly milieux as a significant early medieval phenomenon. Insofar as all three were susceptible to political interpretations, they may broadly be compared to L'Orange's allusive and declarative "iconography of cosmic kingship." But both the explicit mode of representation that they employ and the transactional fashion through which their meanings were produced distinguish them from L'Orange's objects of study. We might then ask if the concept of cosmocracy remains useful for their interpretation.

When we speak of cosmocracy, we do not, of course, mean that any one person actually ruled the cosmos.[106] Cosmocracy is better understood as a style of rule whose characteristics have been well expressed by Marshall Sahlins: "By means of a bureaucracy that extends their presence as well as their power, . . . cosmocrators . . . produce a distinctive system of totalised and centralised rule. No particular authority or ritual privilege remains to the underlying people on the basis of their indigeneity. They are an unmarked *demos,* whereas the king detains the powers of heaven and earth both. . . . By their privileged relations to world-encompassing gods— whether by descent, incarnation, or superior virtue — such rulers would finally overcome human finitude by confounding their polis with the cosmos and submitting both to their own agency. They represent and condense the universe in their royal palaces, cosmopolitan courts, exotic regalia, and foreign tributes."[107] Cosmocracy denies the existence of forms of authority that predate its establishment and locations of political authority outside its own central site of administration.

The ruling ideologies of the Umayyads, the Carolingians, and the Ottonians were indeed tinged with cosmocratic pretense, but day-to- day styles of rule tell a different story. All three states were characterized by forms of itinerant kingship. The rulers and their representatives, including their family members, were constantly underway, traveling from one conclave to the next, enacting those tedious but indispensable rituals of mutual recognition in which local elites reaffirmed their fealty to their sovereigns and the sovereigns confirmed the standing of local elites.[108] Such explicit attentions to the claims of indigenous elites whose power predated the foundation of the ruling dynasty reveal that their style of rule was only very weakly cosmocratic.

Thus when Farazdaq evoked the image of a "celestial canopy" constructed by the Umayyad dynasty, this served not to frame the solitude of a Khosrow, but to embrace a community by marking a station to which the people rode to converse with their patron. A few decades later, and on the opposite side of the former Roman world, Alcuin dedicated a pedagogic dialogue to Charlemagne's adolescent son Pippin in which the image of the cosmos is put to similar use: "*Pippin:* What is the year? *Alcuin:* The chariot of the world [quadriga mundi]. *P:* Who leads it? *A:* Night and day, cold and heat. *P:* Who is its charioteer? *A:* The sun and the moon. *P:* How many palaces do they have? *A:* Twelve. *P:* Who are the governors [praetores] of the palaces? *A:* Aries, Taurus, Gemini, Cancer, Leo, Virgo, Libra, Scorpio, Sagittarius, Capricorn, Aquarius, Pisces. *P:* How many days do they dwell in each palace? *A:* The sun, thirty days and ten and a half hours; the moon, two days, eight hours, and two thirds of an hour."[109]

We are on familiar ground: the final question brings us back to Alcuin's epistolary exchange with Charlemagne in 798. New, however, is the political metaphor invoked to characterize the heavenly cycles. The *quadriga mundi* appears as a ruler making the yearly rounds of his palaces, where he is greeted by each of his *praetores* in turn. One can hardly imagine a more striking evocation of the peripatetic nature of Carolingian kingship. For at the same time that Pippin was learning the basics of astronomy, Charlemagne and his advisors were busy creating "a consciously planned royal landscape, which was multi-centred and predicated on movement between a series of complementary centres."[110]

The polity of the medieval Mediterranean that best fits Sahlins's account of cosmocracy is neither the Frankish nor the Islamic, but the late-late Roman Empire, Byzantium. As a rule, the Byzantine emperor left Constantinople only on military missions, to subdue the barbarians, and certainly not to visit the elites of his various provinces. The imperial city was a fixed location at the center of the *oikumene* (civilized world).[111] It is no accident that the Byzantine emperor is also the only medieval ruler for whom L'Orange found room in his study of "cosmic kingship." The Washington tondo exemplifies the allusive and declarative nature of a certain idea of Byzantine cosmocracy (see fig. 19). If it is an image of cosmos and emperor, then the allusive representation of the cosmos and the explicit representation of the emperor place the emphasis firmly on the latter, as the figure who subjugates the cosmos and effaces its particularities.

The radiant Byzantine emperor, majestic in his solitude, presents an image completely dissimilar to those adorning the mantle, table, and bath. Its alterity may help us understand why less-centralized states found the explicit depictions of the cosmos useful in political transactions. The cosmoses of the star mantle and of Qusayr ʿAmra are busy, thickly populated places. While each possesses a set of ordering principles, neither has an obvious center. Such crowded compositions were appropriate to states in which multiple actors made successful demands for representation, and in which subjects retained the right to unique identities on the basis of their indigeneity. These explicit representations of the cosmos are differentiated. They depict a host of individual figures united by size and relative position but each visibly distinct from the other.

The differentiated cosmos was ideally suited to a transactional production of meaning, in which monuments gained their political significance not through declaration but through circulation along networks of political authority (in the case of the star mantle and silver table) or by marking sites of political transaction (as in the case of Qusayr ʿAmra). The polyvocality represented by the differentiated cosmos was enacted through these transactions. It also presents a striking analogy to the transmission of scientific diagrams in the more conventional medium of manuscript illumination. The Aratean cycles and celestial maps that circulated via Carolingian manuscripts of the early ninth century, to which we turn in the next chapter, passed with ease between episcopal, monastic, and courtly milieux. They too traced networks of political authority, which naturally involved the king but were not necessarily directed by him. The challenge, therefore, is to shield our eyes from the blinding brilliance of the royal sun until the lesser lights resolve into their unique constellations.

3 Carolingian Consensus

In 1942, while German armies fought a multifront war, the keepers of the relics of Ewald the Dark and Ewald the Fair— two Northumbrian priests killed during the Saxon missions of the seventh century— removed the remains of the martyrs from their shrine in the church of St. Kunibert in Cologne. The cloth in which the bones had been wrapped for centuries was unfurled to its full length of over three meters, revealing its tripartite construction: a central piece of blue linen with two roughly square pieces of green silk stitched to either end, all three sections embroidered in colored silks of various hues (fig. 31).[1] If the cloth were laid flat, the eye would first be drawn to the labyrinthine pattern that covers most of the central piece. However, the orientation of the decoration on the two smaller pieces suggests that they were meant to hang as pendants to either side of a flat surface. For this reason, the piece has plausibly been described in the scholarly literature as an altar cloth, although any function prior to its interment with the Ewaldi must remain hypothetical.

The first pendant is anchored by a central medallion within which two affronted half-circles enclose standing figures bearing torches (fig. 32). The figure at left wears a radiate crown, and the head of the figure at right is framed by a crescent moon: Sol and Luna. Four chains connect the central medallion to the corners of the rectangular frame, dividing the surrounding field into four quadrants in which twelve smaller medallions appear, each tied to the central medallion by a radiating thread. In the lower quadrant we find, from left to right, a figure holding a pair of scales, an eight-legged creature with a stinger on its tail, and an archer with drawn bow: Libra, Scorpio, and Sagittarius. Together, the twelve medallions form a ring of the zodiac encircling the sun and the moon.

The second pendant (fig. 33) displays a similar, but more crowded, composition. The central figure is seated and is identified by a titulus as *annus* (the year). In his hands he holds two heads accompanied by the labels *dies* and *nox* (day and night), and he is bracketed by two pairs of fiery wheels. This composition is inscribed within two concentric circles. The inner circle contains eight bust-length figures in medallions, which are accompanied by the names of the four elements and the four seasons. The outer ring contains twelve medallions with the signs of the zodiac, unlabeled. In the upper corners of the rectangular frame appear the Greek letters alpha and omega, each crowned by a small cross, while the lower corners contain personifications of ocean and earth.[2]

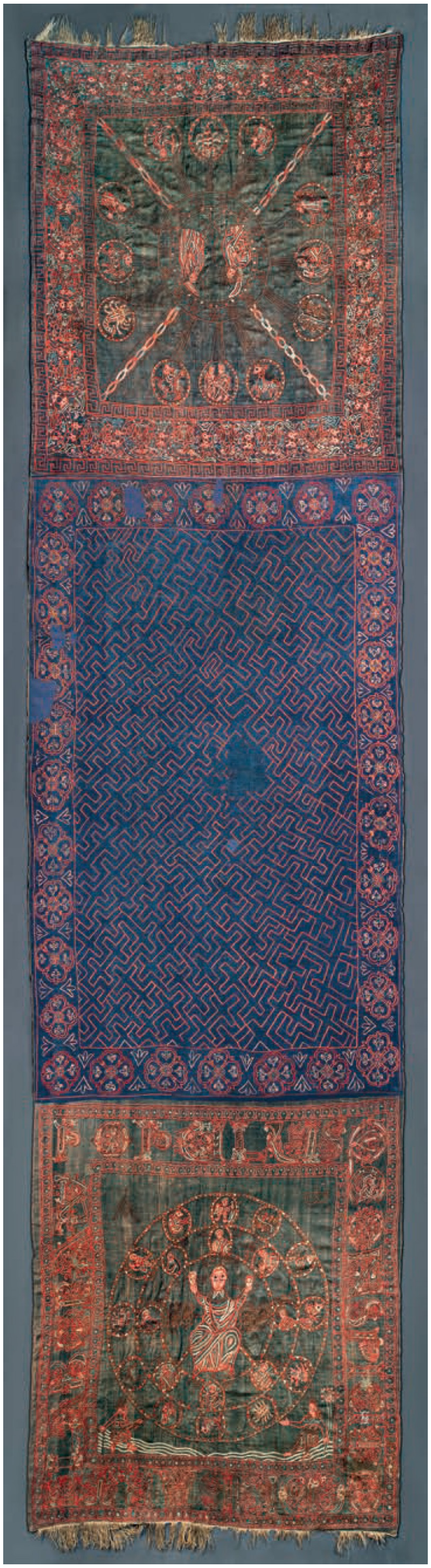


FIGURE 31
Cloth of the Ewaldi. Central Europe, before 1000. Silk embroidery on silk and linen, 310 × 83 cm. Cologne, Pfarrkirche St. Kunibert.

The zodiac is the only iconographic element shared by both pendants, and on both its constituent constellations are unlabeled. Viewers were evidently expected to recognize them.[3] The cloth of the Ewaldi, moreover, literally demands to be viewed, through the inscription that frames the second pendant. Executed in elaborate capitals, similar to those on the outer edge of the Star Mantle of Henry II, the inscription begins at upper left and runs clockwise around the rectangular frame: "populus qui conspicit omnis arte laboratu[m]," the entire people, which looks upon that which is produced by art.[4]

Both subject (*populus omnis*) and object (*arte laboratum*) demand further consideration. If the cloth originally adorned an altar, then the "entire people" can be understood as the community of the church, that same redeemed flock that was evoked in the inscriptions of St. Peter's in Rome. "That which is produced by art" carries a potent double meaning. The primary connotation is the ordered universe, shaped by the divine art of its creator. But a secondary connotation must be the cloth itself, whose pendants distill that divine order into elegantly symmetrical, circular diagrams through a combination of scientific knowledge and embroiderer's art.[5] The cloth of the Ewaldi exemplifies what Gottfried Semper described as the "cosmogonic" function of art: "We make for ourselves a tiny world in which the cosmic law is evident within the strictest limits, yet complete in itself and perfect in this respect."[6]

Of equal interest is the relationship between the two terms "populus omnis" and "arte laboratum." The phrase is oddly structured. Without the "qui" it would easily resolve as a statement of fact ("the entire people looks upon that which is produced by art"), but the introduction of the relative pronoun renders it incomplete. We might punctuate the phrase by ending with an ellipsis, as if some further statement about the people had been omitted, or with a colon, as if the inscription labeled the composition that it enframes as an image of the people. In both versions, the image of the cosmos constitutes the *populus,* either as the object of its collective gaze or as its reflection.

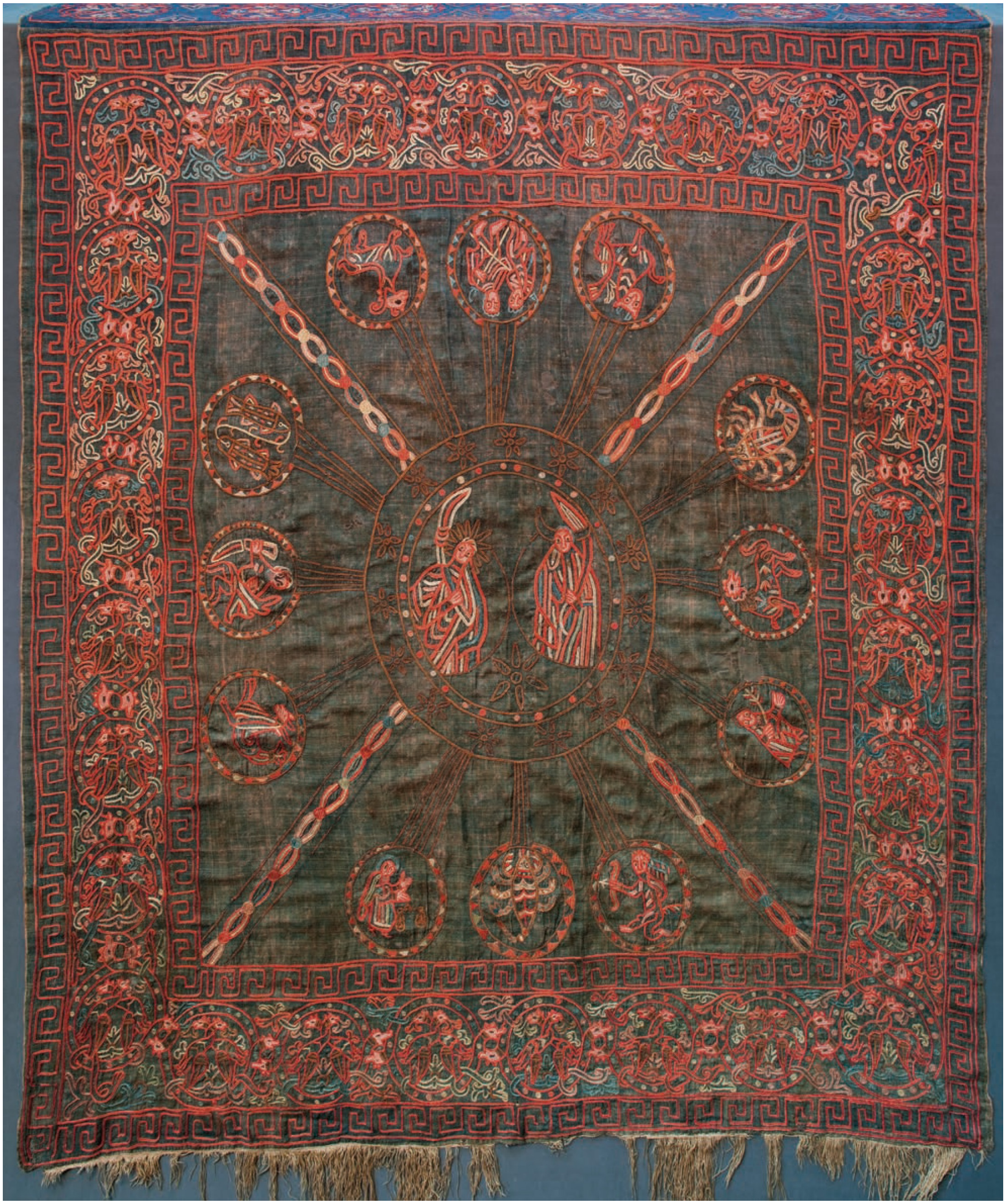


FIGURE 32
Cloth of the Ewaldi (detail).

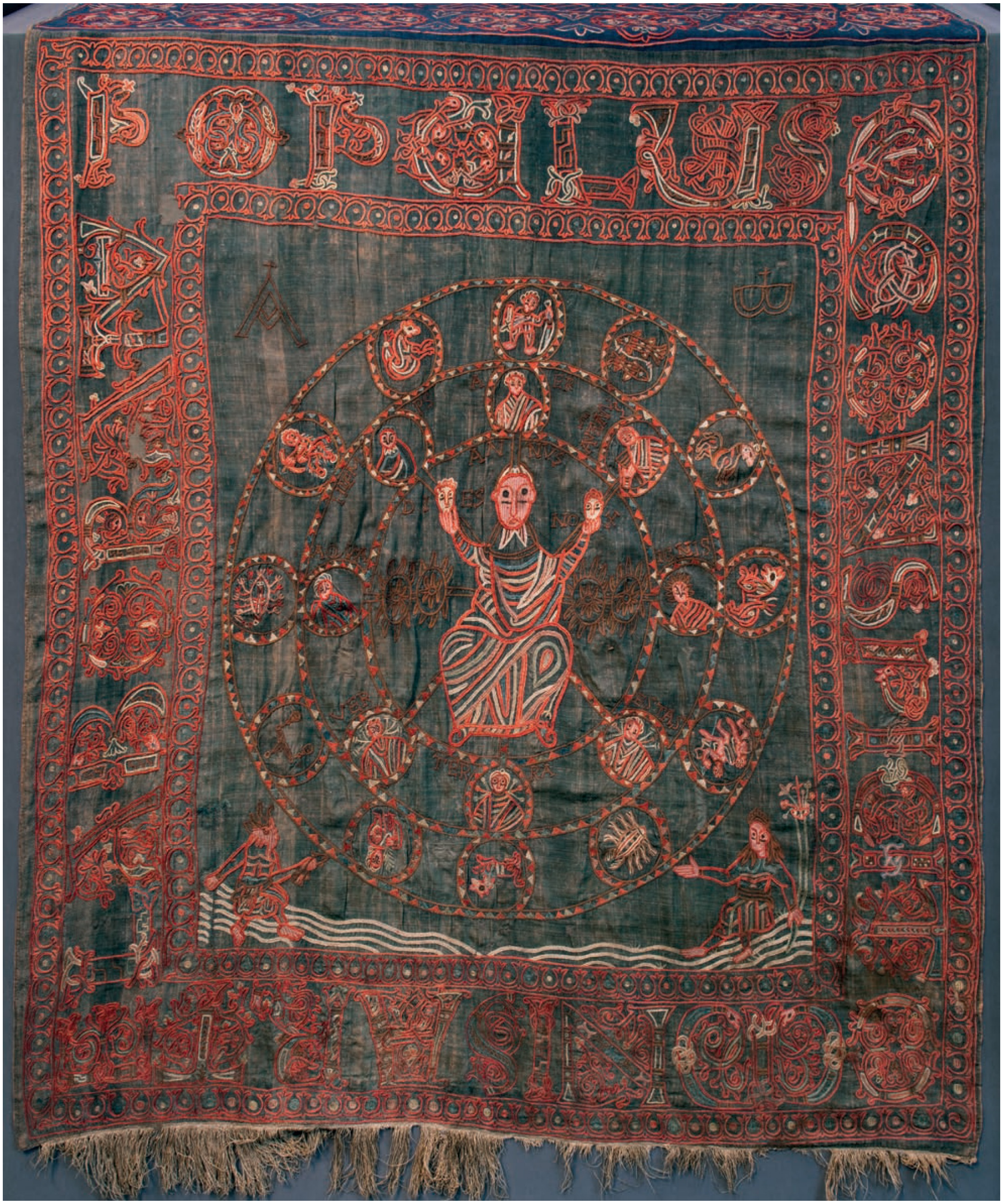


FIGURE 33
Cloth of the Ewaldi (detail).

Commentators are divided between a late Carolingian date for the cloth of the Ewaldi, which would set it close to the Cathedra Petri, and a late tenth-century date, which would set it close to the star mantle. However, we can extract from its decoration a relative date, or a set of conditions that must have obtained when it was made. To begin, such objections to Christian use of the “pagan” constellations as Gregory of Tours had expressed must have been forgotten or overcome for such an object to find a place in a reliquary or on an altar. Furthermore, the signs of the zodiac must have been familiar enough to function without labels, even while other personifications (the elements, the seasons, day and night) still required tituli. The notion of an image of the cosmos that constitutes a people, evoked by the inscription, requires a public for whom that image forms part of a shared visual culture.

The cloth of the Ewaldi therefore addresses its viewers in a different mode from the objects examined in the previous chapter. While the star mantle and the silver table gained significance through transactions, the cloth proposes a more immediate confrontation between a corporate viewer and a static image. Instead of structuring an asymmetrical relationship— like that between the commissioner and recipient of a gift, the author of a will and its executor, or a princely patron and his clients— the cloth conjures an *omnis populus*, a people united in the act of viewing.

Indeed, the zodiac enjoyed a long career as a public good in medieval Europe. By the twelfth century, it had become a familiar component of the sculptural decoration of church portals.[7] Similar conditions of familiarity and public display are satisfied by the monuments of the high medieval Islamic world. For example, in the twelfth century the signs of the zodiac, paired with figures of the planets in a set of eight “exaltations,” formed a fitting decoration for a bridge across the Tigris built by the emir of Mosul.[8]

Thus in both contexts the image of the cosmos returned in the high Middle Ages to the monumental ubiquity that it had known in Roman antiquity.

In both Europe and the Islamic world, the wide distribution of images of the constellations in illuminated manuscripts underpinned their familiarity for an elite public. In this chapter we will be concerned with the first proliferation of astronomical images (rings of the zodiac, cycles of constellation images, and celestial maps) in European manuscripts. Already from the ninth century we can count well over twenty preserved manuscripts containing such images.[9] The strongest correlate to this phenomenon in the Islamic world is the later popularity of the *Book of the Fixed Stars* by the scholar ʿAbd al-Rahman al-Sufi (d. 986), which contained descriptions of the constellations accompanied by their images “as seen in the sky” and “as seen on the globe.”[10] Over seventy manuscript copies of al-Sufi’s treatise survive.[11] The abundance of cosmic images in the European and Islamic Middle Ages is all the more striking when set alongside their scarcity in Byzantium. As we shall see in the next chapter, although there was robust elite interest in astronomy, very few illuminated Byzantine astronomical manuscripts survive.

The success of this "pagan" imagery in medieval Europe is conventionally understood as a triumph of court culture over monkish intransigence, even though the earliest preserved manuscripts with astronomical images were produced in monasteries.[12] In fact, the refinement and distribution of images of the cosmos was a collaborative project that engaged multiple elements of Frankish society: courtly, episcopal, and monastic. Dissemination of astronomical images was one of several means through which a shared identity was forged among the geographically, linguistically, and culturally disparate elites of the Frankish state. Through collaboration and distribution, images of the constellations became an element of the shared visual culture of learned, or even moderately well-educated, Europeans.

The following sections are devoted to four clusters of manuscripts, all of which date to between 800 and 820 or depend on prototypes from that period. The manuscripts in each cluster share certain characteristics, such as the milieu in which they were produced, their size, and the texts and images that they contain. Interpretation of these characteristics is guided by Arno Borst's monumental studies of the development of the *computus* (the study of the reckoning of time) in the Frankish state. For Borst, the early Carolingian period was marked by an increase in the physical size of computistical manuscripts and a shift in their content, from a preference for the antiquarian works of Isidore of Seville (ca. 568–636) to the more systematic computistical treatises of the Venerable Bede (ca. 673–735).[13]

The first cluster unites two small handbooks produced in monastic scriptoria that contain extracts from the works of Isidore and his followers. Astronomical imagery in these manuscripts is limited to a simple wheel of the zodiac. They do, however, share a number of diagrams with the second cluster of manuscripts, of which the most important representative was produced at the episcopal scriptorium in Cologne in 805. Manuscripts of the second cluster also include the texts of Isidore, but placed alongside works by Bede. They are further distinguished by cycles of constellation images that accompany texts derived from the poem of the Hellenistic scholar Aratus.

The third cluster consists of four copies of a primarily computistical anthology that is often called the "Aachen Encyclopedia." Each manuscript contains an identical selection of texts, within which the works of Bede predominate, and very similar sets of figures, including an Aratean cycle. In the fourth cluster, we encounter two copies of a revised and expanded version of the Aachen Encyclopedia, both of which were produced in Bavaria around 818. These two manuscripts introduce several innovations, including a map of the fixed stars that allowed the individual constellations depicted within the Aratean cycle to be viewed in their spatial relationships to each other.

The manuscripts that make up all four clusters are practical volumes, mostly handbooks for the reckoning of time, in which the role of the Aratean cycles, once introduced, is not immediately obvious. They were produced across a wide geographical area, from Saint-Denis to Salzburg, and in monastic, imperial, and episcopal milieux. Imperial initiative helped to motivate scholarly attention to the computus, but illuminated computistical handbooks were first produced in monastic and episcopal scriptoria, and the Aachen Encyclopedia emerged in dialogue with handbooks that were produced at such provincial centers as Cologne and Salzburg.

Each cluster is linked to the next by substantial shared elements: the first to the second by a shared series of diagrams, and the second to the third by the adoption of the Aratean cycle. The selection of texts in the fourth cluster depends directly on that of the third. These shared elements suggest mutual awareness among the producers of various types of computistical handbooks in early ninth-century Francia. For example, the production of the Bavarian compendium was clearly motivated by familiarity with the Aachen Encyclopedia. However, intense engagement with astronomical imagery in this period did not lead to the formation of a rigid textual or visual canon. Instead, producers of individual manuscripts treated their prototypes as malleable exempla susceptible to improvement. Steady appraisal and adaptation lent a momentum to astronomical iconography beyond the occasional copying of venerable exemplars and promoted its adoption as a central element of a shared visual culture.

THE MONASTIC HANDBOOKS

The first cluster consists of two primary exponents: one manuscript today held in Basel, and a second in Munich.[14] Both were produced in monastic scriptoria (Fulda, and St. Emmeram in Regensburg, respectively) in the early ninth century.[15] Both are relatively small: the manuscript in Basel measures 97⁄8 by 7½ inches (25 × 19 cm) and that in Munich 9¼ by 77⁄8 inches (23.5 × 20 cm). They also share similar textual profiles. The Basel manuscript begins with excerpts from Isidore’s *De natura rerum*, followed by medical texts and charms in old German, and a series of figures and diagrams, including a number of astronomical-calendrical rotae. For example, one folio (fig. 34) contains three rotae: at the top, a personification of the sun surrounded by the names of the zodiacal signs and the corresponding months; at bottom left, a rota containing a personification of the moon; and at bottom right, a rota devoted to the lunar month.[16] The Munich manuscript opens with an excerpt from Isidore's *Etymologies* and contains a series of diagrams closely related to those in Basel (compare figs. 34 and 35).[17] Other texts include a copy of the so-called Irish computus of 719, an essentially Isidorean work, and the only complete copy of the so-called Regensburg protest letter of 809, which Borst understood as a reaction against the rising influence of Bede's computistical works.[18]

The zodiac of the Basel manuscript (fig. 36) appears in the series of diagrams. It is composed of two concentric circles, each divided into twelve parts. The outer ring contains ink drawings of the twelve signs of the zodiac, which frequently exceed the allotted spaces. There is no discernible order in the orientation of the individual figures. For example, four-legged beasts face clockwise (Leo) and counterclockwise (Taurus), their feet resting on the inner circle (Aries) and the outer (Capricorn). Some constellations display elements consistent with ancient iconography, but the attributes of other figures have mutated beyond recognition.[19] For example, Sagittarius appears as a recognizably hybrid beast, but his arrowless "bow" has become an arc connecting his neck to a rear hoof. Similarly, Aquarius's water vessel resembles a long blade attached to a short handle. Most baffling is the figure of Libra, whose head and torso issue in a pair of winglike appendages. Perhaps the flask-shaped object at the field's outer edge preserves a dim reminiscence of her conventional scales.

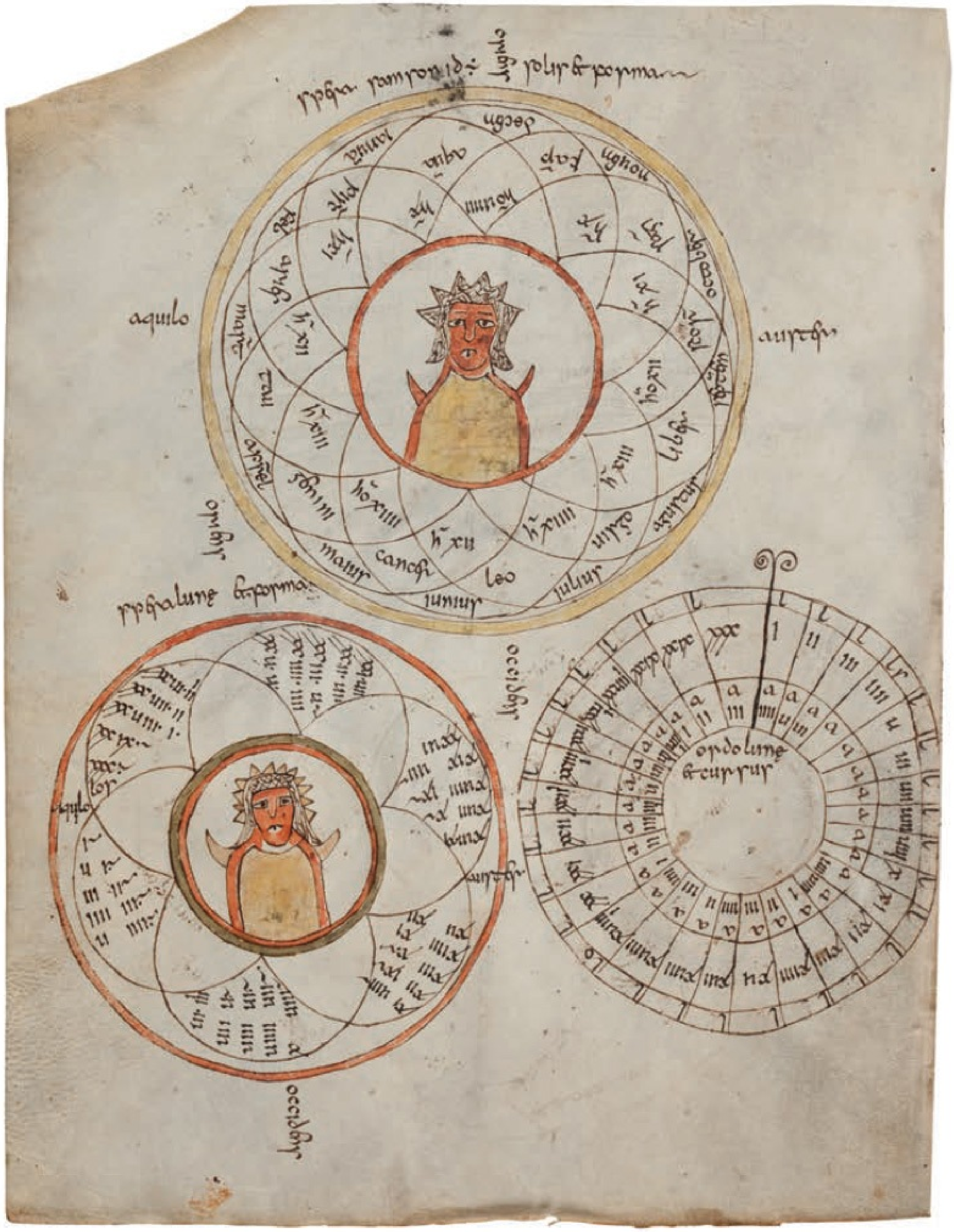
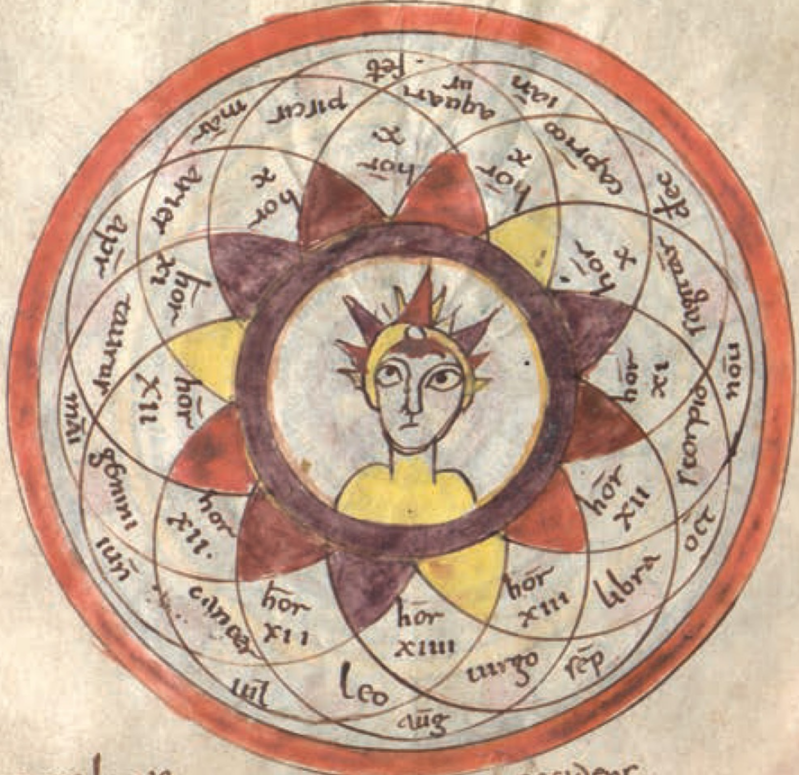


FIGURE 34
Rotae with figures of the sun and moon. Collection of astronomical and medical texts. Fulda, early 9th

century. 25 × 19 cm (full folio). Basel, Universitätsbibliothek, F III 15a, fol. 22v.



spera lanae occidens

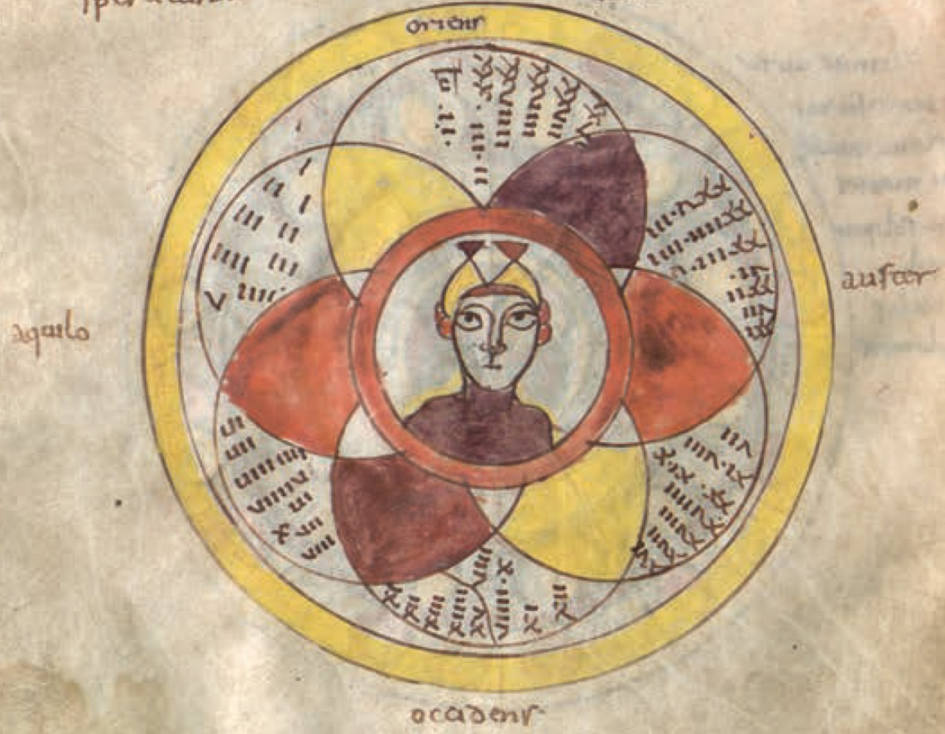


FIGURE 35
Rotae with figures of the sun and moon. Collection of astronomical and computistical texts. St. Emmeram in Regensburg, early 9th century. 23.5 × 20 cm (full folio). Munich, Bayerische Staatsbibliothek, Clm 14456, fol. 72v.

Each sign is accompanied by a series of texts.[20] Names of apostles and of sons of Jacob appear outside the circle (thus Gemini is paired with Thomas and Zabulon), while the names of the signs appear alongside the figures, together with the names of divinities, months, and specific hours (with Gemini we find Saturn, May, and the ninth hour). The innermost circle contains descriptions of the illnesses that await persons born under the corresponding sign, thus invoking that branch of astrology that associates “the twelve signs of the zodiac with specific parts of the soul or the body,” and which Isidore had condemned as superstitious.[21] Together with the medical texts and vernacular charms preserved elsewhere in the manuscript, these descriptions indicate an interest in the relationship of cosmology to medical knowledge and demonstrate that monastic scholarly activity was not limited by a strict interpretation of Christian orthodoxy.

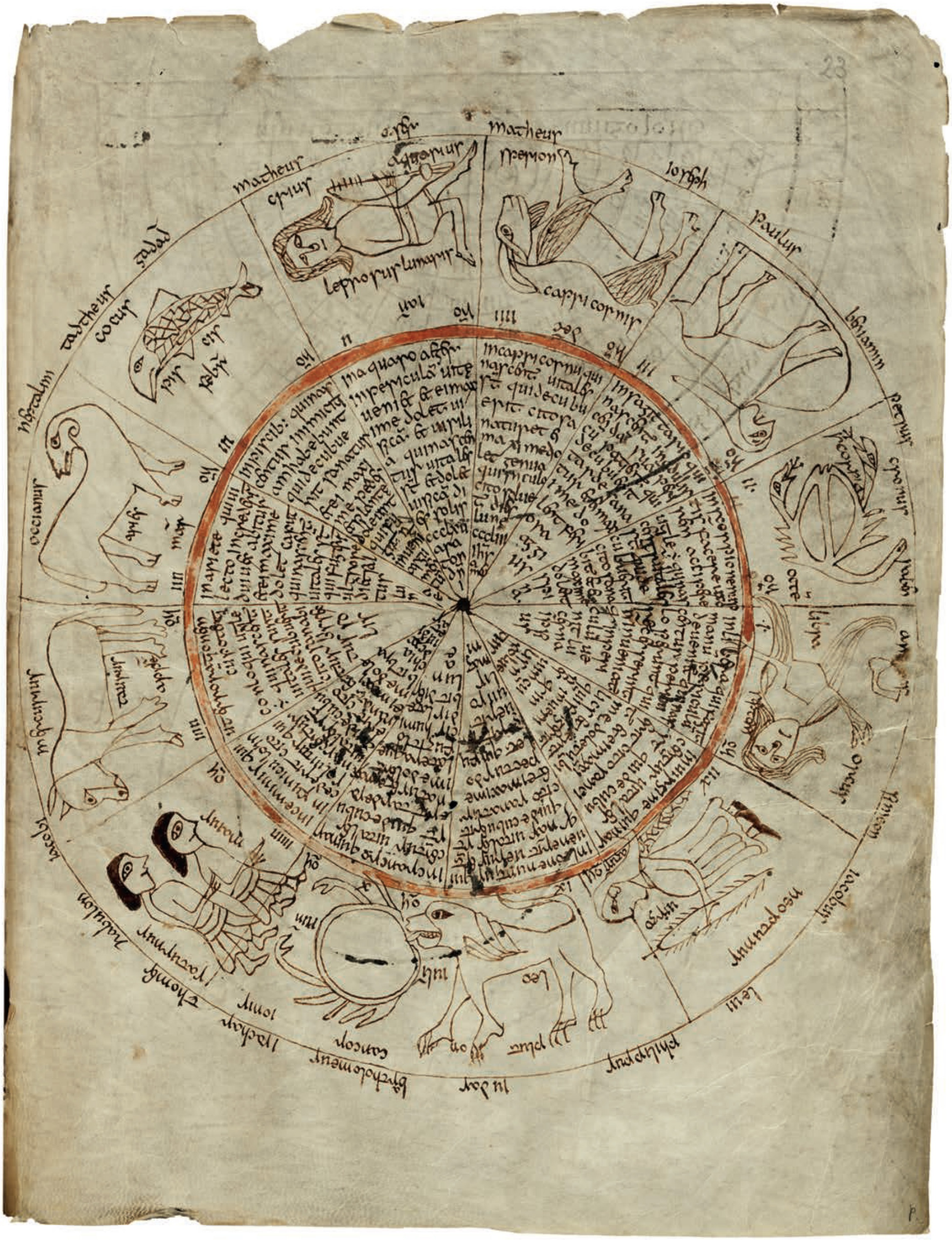


FIGURE 36
Zodiac. Collection of astronomical and medical texts. Fulda. Basel, Universitätsbibliothek, F III 15a,

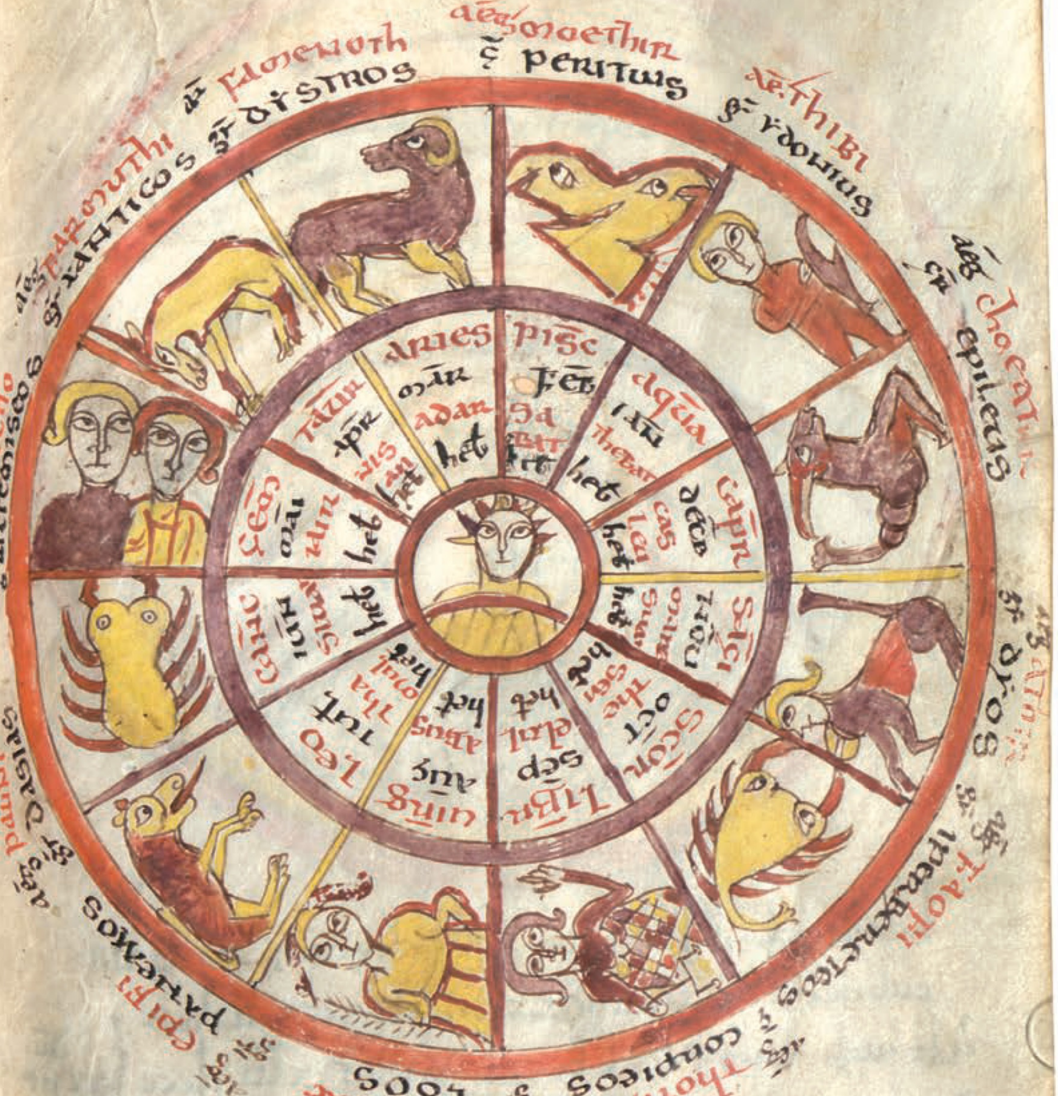
fol. 23r.

The zodiac of the Munich manuscript (fig. 37) is superficially similar to that in Basel, but closer inspection reveals differences of both composition and content. It is composed of three concentric circles, with the two outer rings divided into twelve and the central medallion occupied by the figure of the sun wearing a radiate crown. The outermost ring contains the signs of the zodiac, with the individual figures outlined in black and filled in with yellow, purple, and red. There is no obvious pattern to the orientation of the figures, but each constellation remains within the confines of the space provided. Like the Basel manuscript, that in Munich contains some surprising descendants from ancient iconographic conventions: Sagittarius’s bow and arrow here form a beaklike appendage issuing from his chest, and Aquarius’s water vessel resembles a lobster’s claw. However, fewer and less outlandish texts accompany the figures than in the Basel manuscript.[22] The purported names of the constellations in Egyptian and in Greek are written outside the ring, while the inner ring contains the Latin names of the constellations and the corresponding months in Latin and Hebrew. These texts betray none of the “superstitious” interests of the Basel zodiac, displaying instead an affinity with standard texts on the computus.[23] The only truly unexpected element on this folio is the two-headed figure located beneath the circular diagram and labeled “CΠEKIB” (“biceps” written backward and in Greek).[24]

The Basel and Munich zodiacs may be compared with a third drawing from the ninth century (fig. 38), found on a fragmentary folio preserved in the binding of a fifteenth-century manuscript today in Darmstadt.[25] The full breadth of the diagram, which is composed of two concentric circles, is preserved, but its lower quarter has been lost. The central medallion houses a figure of Sol wearing an unruly radiate crown. The outer ring is divided in twelve and contains the signs of the zodiac, each of which is identified by a simple titulus placed directly outside the circle. The composition follows a stricter logic than in the Munich or Basel manuscripts, with the feet of all preserved figures pointing toward the inner circle.

Instead of attempting to fit the entire figures of Aquarius, Sagittarius, and Libra within the spaces provided, the draughtsman has selectively cropped them. For example, only half of Sagittarius’s torso and a single leg are represented, so that he is no longer identifiable as a hybrid beast. Perhaps such variations indicate that no reliable prototypes were available in the scriptorium that produced the diagram, or perhaps they serve to emphasize the signs’ defining attributes.[26] Indeed, of the three zodiacs examined here, only the Darmstadt version clearly depicts Sagittarius’s bow and arrow, Aquarius’s water jug, and Libra’s scales.

Barbara Obrist has understood the Basel zodiac as a witness to the kind of astronomical iconography that circulated in the early medieval monasteries of England and Ireland.[27] Indeed, it is clear that the zodiac was a subject of interest in monastic milieux around the year 800, little hindered by whatever religious scruples might, in principle, have opposed its depiction. This interest was no doubt provoked by discussions of the zodiac in standard texts, including those same Isidorean and pseudo-Isidorean works that were included in the Munich and Basel compilations.


aeg' Farmuthi gr' xanticos
aeg' Famenoth gr' distros
aeg' Moecthir gr' peritius
aeg' Thibi gr' ydonius
aeg' Choeak gr' epileus
aeg' Athir gr' dyos
aeg' Faophi gr' hyperberetes
aeg' Thoth gr' corpieos
aeg' Mesore gr' loos
aeg' Epifi gr' panemos
aeg' Pauni gr' daisius
aeg' Pacho gr' artemisios
aries mar adar het
pisc feb sabat het
aqua ian thebat het
capri dece casleu het
sagi nove marsuan het
scorp oct thesri het
libra sep elul het
uirgo aug ab het
leo iul thamul het
cancer iun siuan het
gemi mai iar het
taur apr nisan het

cetus

FIGURE 37
Zodiac. Collection of astronomical and computistical texts. St. Emmeram in Regensburg. Munich, Bayerische Staatsbibliothek, Clm 14456, fol. 73r.

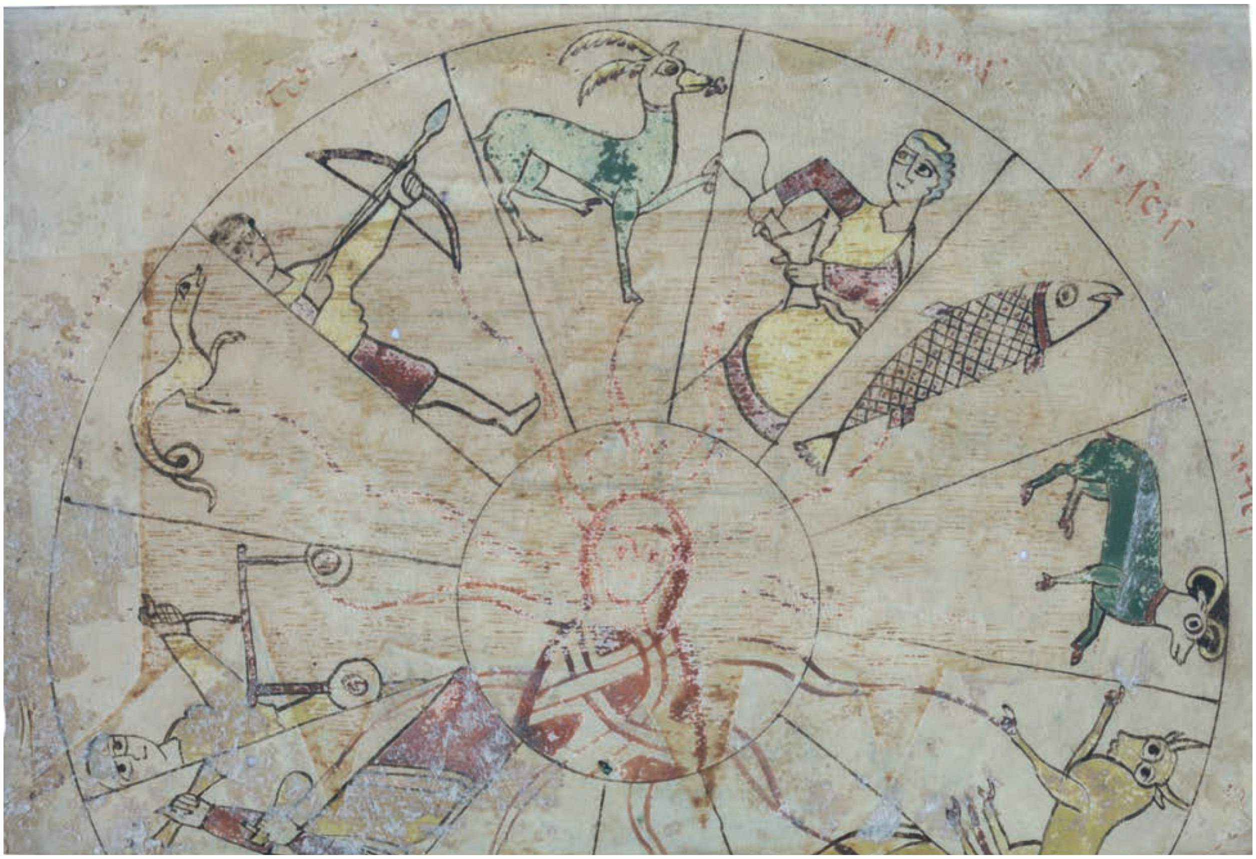


FIGURE 38
Zodiac. Fragment of 9th-century manuscript preserved as the endpaper of a later theological compilation. 14.5 × 22.5 cm. Darmstadt, Universitäts-und Landesbibliothek, Hs. 684.

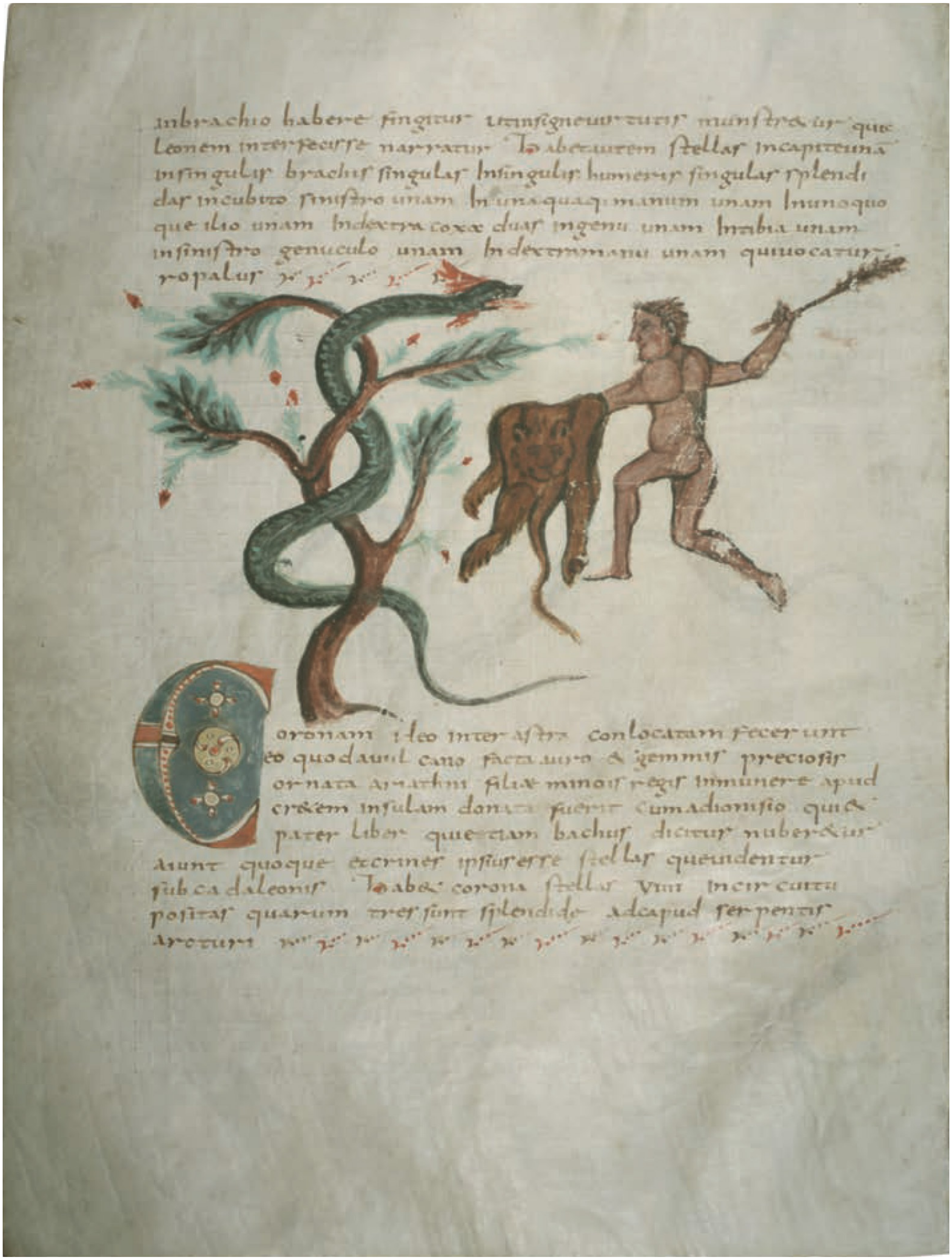
The functions of these figures will have varied according to the contexts in which they appeared. The iconographic eccentricities of the Basel and Munich zodiacs likely result from fidelity to corrupt or partially understood models, a fidelity also expressed by the manuscripts' conservative textual profiles. In both cases, while the figural representation of the zodiac was a desideratum, it was not executed by trained artists. In this respect, the Darmstadt zodiac is of particular interest despite its fragmentary preservation and total lack of context. It exhibits limited regard for the conventions of ancient iconography, instead depicting figures that could easily be matched to the names of the signs. Thus, while Sagittarius looks more like an archer than in Basel and Munich, he no longer resembles his ancient, hybrid kin. The Darmstadt manuscript might betray dissatisfaction with available models for astronomical iconography, but its solution was diametrically opposed to that of the manuscripts of the second cluster, to which we now turn.

COLOGNE AND LAON

A computistical compendium preserved in Cologne, where it was produced at the turn of the ninth century, testifies to a desire for representations of the constellations that were both clearly legible and faithful to ancient convention.[28] Measuring 14⅜ by 10⁷⁄₁₆ inches (36.5 × 26.5 cm), twice the size of the monastic handbooks, it was produced under the patronage of Hildebald (d. 818), Archbishop of Cologne.[29] As presently bound, the Cologne manuscript contains two sections: a short chronicle copied in 798 and a much longer computistical anthology copied in 805, which includes nearly complete versions of the *De temporum ratione* of Bede and the *De natura rerum* of Isidore. Illumination is limited to the computistical section: a series of thirteen non-figural diagrams related to those in the Munich and Basel manuscripts, albeit without a zodiac; a second series of diagrams accompanying the text of Isidore's *De natura rerum;* and images of the constellations and other heavenly bodies accompanying the so-called Revised Aratus Latinus.[30]

This last text and its kin, which played a major role in the dissemination of constellation images in medieval Europe, ultimately derive from the *Phaenomena* of Aratus, a poet active at the Antigonid court in Athens in the third century b.c. Consisting primarily of descriptions of the fixed stars and the constellations that they form, the *Phaenomena* became popular both as a work of literature and as a school text. It was translated into Latin at least three times, and the translations of Germanicus and Avienus enjoyed a sustained readership in the Middle Ages. Already in the Hellenistic era the *Phaenomena* attracted a number of scholia, commentaries, and supplementary texts. In the second or third century a.d., a selection of these texts was combined with the original in a new "edition." In the eighth century, this edition was translated into Latin by someone with a Greek dictionary but little or no knowledge of the language. The result was predictably unsatisfying, and a revision was produced shortly thereafter from which the text of Aratus's poem had largely disappeared, leaving "a series of astronomical fables, followed by star catalogs." This is the Revised Aratus Latinus, the source of the descriptions of forty-one constellations that follow the treatises of Bede and Isidore in the Cologne manuscript.[31]

After each description there follows a space for a miniature, though many of these were left unfilled or incomplete. The first prominent blank appears directly before the constellation images proper: an entire side which might have been reserved for the two hemispheres of a celestial globe.[32] Typical of the completed miniatures is the folio dedicated to Hercules (fig. 39). The text describes the hero’s memorialization by Zeus in the form of a constellation and states that his location above the constellation of the serpent depicts one of his labors.[33] In the miniature, Hercules lifts his club as if about to strike the serpent, which is coiled within the branches of a tree. Presumably we are meant to think of the dragon that guarded the apples of the Hesperides. A lion’s skin, one of the standard attributes of Hercules in ancient art, is prominently draped across his arm. There is no indication of the positions of the stars that compose these constellations in the night sky. The miniaturist has instead produced a dynamic, narrative scene that is faithful both in style and iconography to ancient conventions.



inbrachio habere fingitur ut inſigne uirtutis monſtraretur quae
leonem interfeciſſe narratur Habet autem ſtellas incapite una
inſingulis brachiis ſingulas Inſingulis humeris ſingulas ſplendi
das incubito ſiniſtro unam In unaquaq; manum unam Inunoquo
que ilio unam Indextra coxa duas ingenu unam Intibia unam
inſiniſtro genuculo unam Indextra manu unam qui uocatur
ropalus

Coronam i leo inter aſtra conlocatam fecerunt
eo quod a uulcano facta auro & gemmis precioſis
ornata ariathni filiae minois regis inmunere apud
cretem inſulam donata fuerit cum a dionisio qui &
pater liber qui etiam bachus dicitur nuberetur
Aiunt quoque et crines ipſius eſſe ſtellas que uidentur
ſub cauda leonis Habet corona ſtellas VIIII incircuitu
poſitas quarum tres ſunt ſplendide ad caput ſerpentis
Arcturi

FIGURE 39

Hercules. Compendium of computistical, natural-scientific, and astronomical texts. Cologne, 805. 36.5 × 26.5 cm (full folio). Cologne, Diözesanund Dombibliothek, Hs. 83 II, fol. 156v.

This naked, fleshy Hercules stretches and strides in a fashion both wholly corporeal and entirely dissimilar to the scribal sketches in the monastic handbooks. It is certainly the work of a professional painter. It is also one of only six miniatures of the constellations in the Cologne manuscript that were fully painted, all of which appear within the first few pages of the Revised Aratus Latinus.[34] The next description, of the constellation Corona, is followed by a blank space. Other constellations, such as Pisces, are depicted in preliminary drawings that include verbal indications of the colors required to complete the painting. Still others, including Centaurus, were confidently executed in pen and ink.

It has been proposed that the Aratean cycle remained without figures until roughly 820, its putative aniconism tied to the “revulsion” and “fear” inspired by images of the constellations.[35] The argument does not convince. We have already seen that the zodiac was depicted in contemporary manuscripts produced in monasteries. Nor is it clear why, if the decision to add the images was reached fifteen years after the texts were copied, the cycle was still left radically incomplete.[36] A more plausible hypothesis was advanced by Anton von Euw: the six completed paintings were executed around 805 by a traveling artist who was also responsible for the initials at the start of the Revised Aratus Latinus (fig. 40) and who left before finishing the cycle.[37] Thus the incomplete nature of the Cologne illuminations would result from an insistence on paintings executed by skilled artists on the basis of authoritative models. Similarly, the manuscript includes the complete texts of Isidore and Bede, while the first page of the Revised Aratus Latinus emphasizes the text’s attribution to a named authority: “Arati” is set off by a fine initial “A” in which the head of a young man emerges from behind three interlocking staffs (see fig. 40). The textual excerpts and visual adaptations in the manuscripts of the first cluster may demonstrate respect for ancient authorities, but the Cologne manuscript promotes the faithful replication of integral models.

Within the broader context of the Cologne manuscript, the Aratean cycle represents an intrusion of astronomical material into an otherwise uniformly computistical anthology. Of course, knowledge of the constellations could be useful in the reckoning of time. However, the Aratean cycle in Cologne consists of isolated figures lacking any indication of the individual stars that were understood to compose them. It would thus have been of little use in the practice of the computus and was “more suited for mythological edification than for astronomical observation.”[38]

The Cologne manuscript is rendered all the more significant by its patron’s close association with Charlemagne, whom he had served as first chaplain since 791. Hildebald was the first witness to sign the emperor’s testament in 811 and administered the last rites to him in 814.[39] The anthology that he commissioned, moreover, occupies an intermediate position between the manuscripts of the first cluster, with which it shares its cycle of diagrams, and the Aachen Encyclopedia, to which we turn in the next section, and which also contains an Aratean cycle. However, the Cologne manuscript shares still more with another manuscript of the early ninth century, originally produced in northern France and preserved today in Laon.[40]

The Laon manuscript shares with Munich, Basel, and Cologne a textual emphasis on the Isidorean tradition, in particular the *De natura rerum;* although, like Cologne, it also includes portions of the systematic texts of Bede, including that author’s own *De natura rerum.* It furthermore includes a series of diagrams very similar to those found in Munich and Basel (compare fig. 41 with figs. 34 and 35), while simultaneously including, like Cologne, an Aratean cycle.[41] Unique to the Laon manuscript is an extract from the *De cursu stellarum* of Gregory of Tours, illuminated by simple drawings of stars.[42] Since in this manuscript Gregory’s text is bound together with images and discussions of those very “pagan” constellations that it rejects, the compilers of the manuscript must have been drawn not to its polemical but to its practical aspects, including methods for determining the appropriate hour for pre-sunrise prayer.[43]

RATI EA QVAE VIDENTVR OSTENSIONEM QVOQVE ET QVIBVS VIDENTVR oportet fieri ad auſtrum. exaduerſo habenſ ſeptemtrionem. ad dextriſ orientem. a ſiniſtriſ occidentem. Naturaliſ autem poſitio ſphere mundi haec eſt quod ſit medio caelo cancer. Super ſoliſtitium aeſtiuum orientaliſ partiſ. Super aequinotialem occidentalem arietem draconiſ capud deorſum in id quod terminat. Circuit autem ſub quod terminatur. Ipſa quoque ſecundum narrationem poſitio de quibus arati uidentur. Taliſ eſt quod habeat medio caelo capricornum. Super hyemalem ſoliſtitium orientalem ariet&em ſuper aequinotialem occidentaleſ plagaſ draconiſ capud ſurſum apud arcticum ubi miſcentur occaſ ſuerit & orientiſ alterutri. Hab& quidem & poloſ duoſ arcticum totum ſpatioſum qui & aquiluſ dicitur. Hab& quidem & circuluſ maximaſ quattuor. abſque illo qui terminat in quo dictum eſt. Habenſ aequinotialem ſignum candidum. Parua autem quattuor arcticum totum ſublime in quo adornantur ſigna quattuor. arcturi duo cepheuſ a pectore draco. Aeſtiuum ſoleſtitium pluſ habenſ quod ſuper terram aequum autem quod ſubtuſ terrā in quo adornantur ſigna octo. bootiſ corona ingeniculo. lyra. caſſiepia. agitator. cicnuſ perſeuſ. Hyemale ſoliſtitium pluſ habenſ quod ſuper terram aequum autem quod ſubtuſ terram in quo adfirmantur ſigna ſex. Heridanum. nauiſ. centauruſ in quo beſtia ſacrarium piſciſ maior inuiſibiliſ auſtraliſ. Aequinotialiſ autem circuluſ ęquum hab& quod ſuper terram & quod ſubtuſ terram in quo adfirmantur ſigna xu. Equuſ ſerpentariuſ in quo ſerpenſ ẏdriſ in quo arceuſ & coruuſ antecaniſ. aquila delfinuſ orion tela deltoton andromeda. lepuſ. caetuſ. caniſ. unde fieri ōmnia ſigna numero triginta unum abſque eorum inluſ

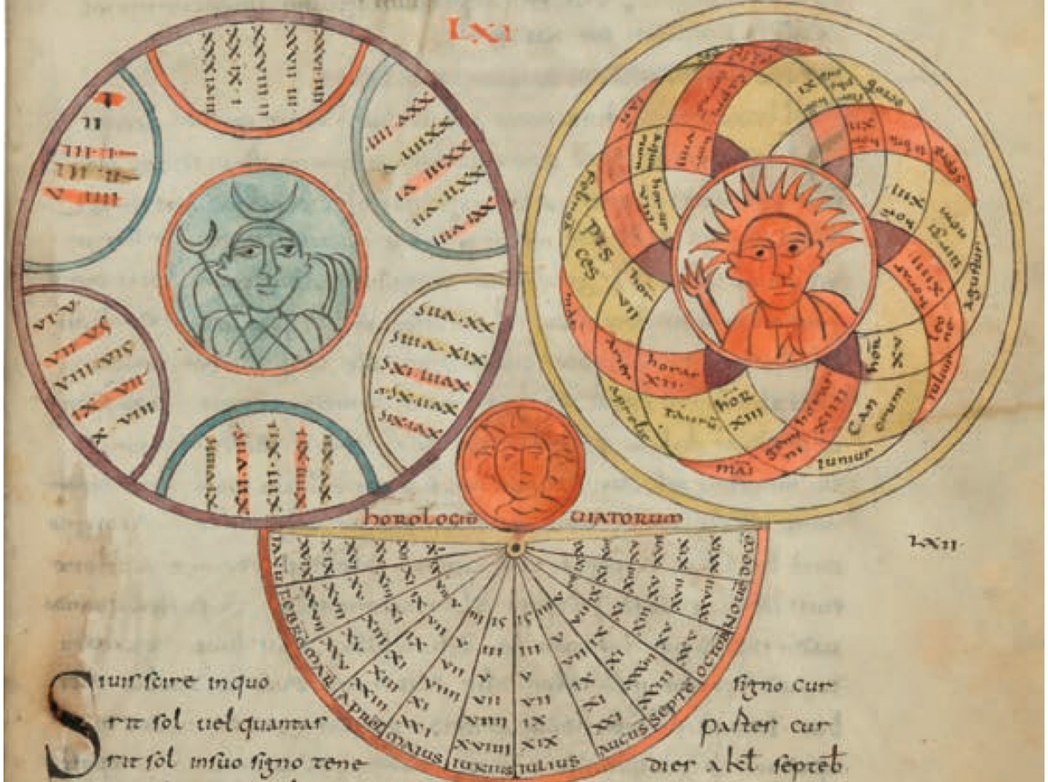
FIGURE 40
Initial “A” of the Revised Aratus Latinus. Compendium of computistical, natural-scientific, and astronomical texts. Cologne, Diözesanund Dombibliothek, Hs. 83 II, fol. 146r.

The constellation images accompany the *De signis caeli* of “Pseudo-Bede,” comprising descriptions of forty constellations. Although these draw on the Aratean tradition, like the Revised Aratus Latinus they contain little of Aratus’s original poem.[44] In the Laon manuscript, the *De signis* occupies nine sides, each of which carries from three to six descriptions of individual constellations. The images of the constellations are consistently set at the left of the page beside the corresponding description. The nude figures, as for example of Hercules (fig. 42) and Boötes, are as fleshy and articulated as their kin in the Cologne manuscript.[45] The Laon constellations also indicate the positions of individual stars on or within the figures and could therefore, in theory, be used to identify the constellations in the night sky, however difficult that might have been in practice.[46]

Thus, while both Cologne and Laon separate the constellation images from the series of diagrams in which they appeared in Basel and Munich, Laon more fully exploits the capacity of the individual figures to serve as carriers of information. Still, missing, however, is a map that might depict the constellations together as seen in the sky.

SPHERE LUNAE SPHERE SOLIS LXI

LXI



LXII

Siuiſ ſcire inquo ſigno currit ſol uel quantaſ paſteſ currit ſol inſuo ſigno tene dieſ a kł ſeptēb uſq· adillum diem dequo inquiriſ & adde ſupra ipſiſ clviii paſteſ hoſ per xxx quantaſ uiceſ quod conueniunt xxx dieſ ſunt inquibuſ currit ſol inſuo ſigno & quitranſeant ubi non conueniunt xxx plenaſ inipſo ſigno currit ſol & ſicut numeruſ quiconuenit minuſ de xxx ita dieſ fecit ſol inſuo ſigno initium & da primum ſignum adari&em dieſ xxx & cetedr ſimiliter per xii ſigna quia hab& ſol inuno quoq· ſigno dieſ xxx · x horiſ & ſemi

LXIII

ARGUMENTUM DECURSU LUNA PERSIGNA

Siuiſ ſcire inquo ſigno currit luna de xii ſigniſ uel quantaſ parteſ currit luna inſuo ſigno uide inquo ſigno currit ſol uel quantaſ paſteſ currit inſuo ſigno & uide quantoſ dieſ hab& luna & multiplica illoſ dieſ per xii & adde ſupra ipſaſ paſteſ inquib; currit ſol inſuo ſigno & inſummate paſte illoſ per xxx & quantaſ uiceſ quod conueniunt xxx ſigna ſunt inquo currit luna & ſicut nume

FIGURE 41

Rotae with figures of the sun and moon. Compendium of computistical, natural-scientific, and astronomical texts. Western Europe, early 9th century. 29.5 × 18.5 cm (full folio). Laon, Bibliothèque Municipale, Ms. 422, fol. 53r.

Helix arcturus maior hab& autem in capite ſtellas obſcuras ſeptem. In ſpatula una ſuper pectus una in pede una in dorſo una in tibia anteriore duas ſuper caudam tres ſunt omnes XVI

Draco qui contin& utrosq. arcturos helicis ſuper uoluit caput fenicis circumcingit cauda hab& autem in capite ſtellas ſplendidas tres & per totum corpus duodecim ab inuicem diſtantes ſunt omnes XV.

Fenix qui & arcturus minor & a quibusdam canis cauda uocatur hab& autem per unumquemque angulum in humero ſplendidam ſtellam. unc̄ in cauda tres ſunt autem inter ambos arcturos ſtellę XXIIJ ſuper aūt ſunt alię ſtellę X quae p̄cedunt & dicuntur ludentes & minisſima una quę uocat̄ polus ubi dicunt totū mundū euolui.

Erculus qui ſtans genu flexo hab& autē ſtella in capite una in utroq. humero una ſplendidam in cubito ſiniſtro una in dextra coxia duas in dextro genu una in eadem tibia una in dextra manu una & in ropolo quem ten& in eadem manu una ſunt omnes duodecim.

ꝉ in ſiniſtro genu unc̄ in eadem tibia unc̄

Corona uero hab& ſtellas nouem in circuitu poſitas ſed ex ipſis ſunt tres ſplendiores ad caput ſerpentis arcturi

Serpentarius qui & aſclepius uocatur ſtans uero ſuper ſcorphionem ten& ſerpentem in manibus hab& autē in capite ſtellam ſplendidam unam in ſiniſtra manu tres in dextra quattuor in utroque humero unam ſplendidam in utrisq. lumbis una in utroq. genu una in dextra tibi cc unc̄ in utroq. pede unc̄ ſunt om̄s ſedecim.

FIGURE 42
Helix, Draco, Fenix, Hercules, and Corona vero. Compendium of computistical, natural-scientific, and astronomical texts. Laon, Bibliothèque Municipale, Ms. 422, fol. 26v.

If the Cologne manuscript were viewed as an intermediary step between the manuscripts of the first and third clusters, then the patronage of Hildebald might serve to anchor the impetus for improvement of the constellation images in the circles immediately surrounding Charlemagne. This approach does have a certain heuristic value, but the Laon manuscript shows that the desire for more authoritative and useful images of the constellations was not limited to court. Furthermore, both manuscripts demonstrate that suspicion of the “pagan” constellations, if indeed it existed at all, did not hinder their use both as bearers of information and as vehicles for the depiction of the human form.

THE AACHEN ENCYCLOPEDIA

While the first two clusters of manuscripts are united by broad similarities in their origins and in their textual and artistic profiles, the second two are much “tighter,” comprising copies of two standardized compilations with remarkably consistent figural components. The third cluster is the most widely distributed and best studied among the four.[47] It consists of four ninth-century manuscripts, of which one is preserved today in Madrid,[48] one in Monza,[49] and two in the Vatican, which will be distinguished here after their presumed places of origin, the abbeys of Saint-Denis[50] and Saint-Quentin.[51]

In size, three of the four manuscripts are situated between the manuscripts of the first cluster and the volume in Cologne: the largest, Monza, measures 13¾ by 10¼ inches (35 × 26 cm); Saint-Quentin, at 7½ by 6¼ (19 × 16 cm), is exceptionally small. Each manuscript contains a computistical compilation that Borst christened the “Aachen Encyclopedia of 809.”[52] Both date and location refer to the Aachen Council of 809, which was convened to resolve a dispute between Frankish and Byzantine monks in Jerusalem over the proper wording of the Nicene Creed.[53] A text containing a series of questions and answers on computistical matters was interpreted by Borst as the record of a meeting held on the council’s margins.[54] Borst understood the dialogue as an attempt to harry a group of conservative experts into accepting Bede’s systematic approach to the computus, and thus the first step toward the compilation of a new, comprehensive handbook for the reckoning of time: the Aachen Encyclopedia.[55]

The evidence for dating this compilation to 809 is equivocal, and the evidence for its composition in Aachen is purely circumstantial. The similarity between the four manuscripts supports characterization of the Encyclopedia as a coherent work.[56] Three manuscripts, moreover, share a table of contents that divides the work into seven books.[57] A short chronicle included in the compilation gives the present year as the ninth since Charlemagne's imperial coronation while several other passages use the year 809 as the basis for calculations.[58] However, three of the manuscripts include another brief chronicle in the margin of the Easter tables, with a common entry for Charlemagne's death in 814.[59] If these entries reflect a common prototype, then the Encyclopedia may not have been distributed as a coherent work until the reign of Louis the Pious. Although the compilation is sometimes accorded a quasi-official status in the secondary literature, it contains no prologue, dedication, or subscription that asserts an imperial origin, which is rather assumed due to the ambition of the project and the large number of books and personnel that would have been necessary to complete it.[60] Also suggestive is the existence of three manuscripts copied shortly after 810 that contain some of the earliest and least corrupt witnesses for specific sections of the compilation, all of which were copied in the neighborhood of Aachen.[61]

Taken as a whole, the compilation represents a more systematic approach to the computus and allied disciplines than the monastic handbooks or the volumes in Cologne and Laon. The first book contains calendars and chronicles, while the second contains practical formulas for the reckoning of time. The third addresses the solar year and the fourth the lunar. The fifth book turns to astronomy and the sixth to metrology, addressing not only the weighing of metal and the measuring of fields but also the weight of the earth and the size of the universe. The seventh and final book contains the entirety of Bede's *De natura rerum* (thus providing a link to the manuscript in Laon) followed by additional metrological texts. The whole work has been justly characterized as "a synthesis of the ancient understanding of natural history and the Christian consciousness of time."[62]

Although the compilation contains a variety of tables and rotae, the diagram cycles of the first two clusters find no echo here. Figural illumination is limited to the fifth book, on astronomy, and consists of a cycle of constellation images and a set of planetary diagrams. The images accompany yet another variation on the Aratean corpus, which contains descriptions of forty-two constellations.[63] The descriptions are more literally descriptive and less entertaining than those of the Revised Aratus Latinus. Most relate only the name of the constellation, the locations of the individual stars, and their number. Whereas the Cologne manuscript describes Hercules by reference to his heroic deeds, the Aachen Encyclopedia simply relates that he has one star on his head, one in his arm, one in his shoulder, and so forth— sixteen stars in all.[64] The four planetary diagrams accompany excerpts on planetary motion from the *Natural History* of Pliny.[65]

The Madrid manuscript is the earliest preserved copy of the compilation and the most artistically ambitious. A *terminus post quem* is provided by two chronologies in which the primary scribe's last entry is the year 820.[66] Its localization depends largely on stylistic analysis of the miniatures. Two pairs of painters were responsible for the constellation images. The figures executed by the first team, which stopped after the figure of Aquarius on folio 59v (fig. 43), were boldly outlined in ink before being filled in with delicately modeled washes of color. The figures by the second team, which picked up with the figure of Capricorn on the same page, are fluid and painterly, mostly abjuring the bold outline and dissolving at their edges into vigorously executed fringes.[67] The miniatures of the first group resemble the work of the "Group of the Coronation Gospels," which is conventionally localized in Aachen, while those of the second group resemble the initials of the Drogo Sacramentary, which was executed in Metz between 845 and 855.[68] Wherever it may have originated, the manuscript had arrived in the Abbey of Prüm by the mid-to late ninth century, where the Easter tables were furnished with an important series of annalistic notices.[69]

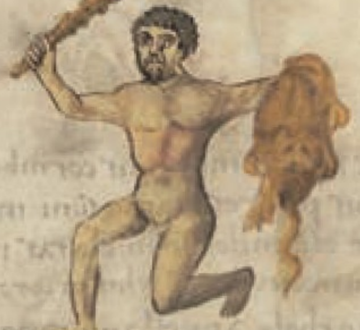
Aquariuſ hab& ſtellaſ incapite obſcuraſ .ii. inumeriſ ſinguliſ claraſ ſingulaſ inſiniſtro cubito .i. claram. indextro cubito .i. & inmanu .i. inmammiſ ſingulaſ. indextro crure .i. inpedibuſ ſingulaſ claraſ. ſumma .xii. Effuſio aquae notata eſt exſtelliſ .xxx. exquibuſ duae clarae. ca&erue obſcuræ ſunt.

Capricornuſ hab& ſtellaſ inſinguliſ cornibuſ ſingulaſ innaſo claram .i. incapite .ii. ſubcollo .i. inpectore .ii. inpede priori .i. inſummitate pediſ .i. indorſo .vii. inuentre .v. incauda .ii. claraſ. ſumma .xxiiii.

FIGURE 43

Aquarius and Capricorn. So-called Aachen Encyclopedia of 809. Central Europe, early 9th century. 30 × 24 cm (full folio). Madrid, Biblioteca Nacional de España, Ms. 3307, fol. 59v.

Herculeſ qui& ingeniculo dicitur hab& ſtellam in capite
unam· inbrachio unam inumeriſ ſingulaſ claraſ· inſiniſtro
cubito ·i· inipſa manu ·i· inutriſque ilibuſ ·i· in dextro
femore ·ii· inpede ·i· ſupra dextram manum· ideſt in
claua ·i· inpelle leoniſ ·iiii· ſumma xvi·



Corona hab& ſtellaſ viii· inorbem poſitaſ quarum ·iii·
clarae quae contra caput ſerpentiſ ſeptentrionaliſ ſ.

Serpentariuſ qui grece ophiucuſ uocatur hab& ſtellā
incapite claram unam inſinguliſ umeriſ claraſ inſinguliſ
pedibuſ claraſ· inſiniſtra manu ·iii· indextra ·iiii· claraſ· incubi
tiſ ſinguliſ ſingulaſ· inſinguliſ genibuſ ſingulaſ indextro crure
claram · ſumma ·xvii·

Serpenſ quem manibuſ ten& hab& ſtellaſ inore ·ii· in
capite paruaſ ·iiii· uſque admanum ſe tenentiſ ·ii· inflexu
corporiſ ·xv· ſumma xxiii

FIGURE 44
Hercules and Corona. Aachen Encyclopedia of 809. Madrid, Biblioteca Nacional de España, Ms. 3307, fol. 55r.

circacaput gorgoniſ claraſ III. Caput autem & harpeſ
ſingulıſ ſtelliſ nota ſunt

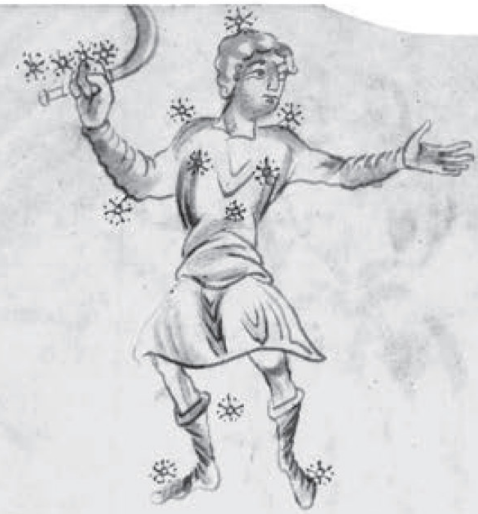
Lyra quae & fidiſ hab& ſtellaſ inutroque pectine ſingulaſ.
incacuminibuſ cornuorum ſingulaſ· inumeriſ ſingulaſ
infundo unam· indorſo unam fiunt VIII·

Cignuſ hab& ſtellam in capite claram·I· inutroque ala
quinaſ· incorpore·I· incauda·I· fiunt·XIII·

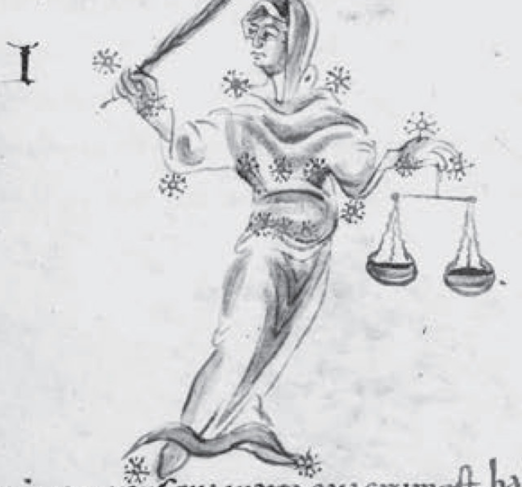
FIGURE 45
Perseus, Lyra, and Cygnus. Aachen Encyclopedia of 809. Madrid, Biblioteca Nacional de España, Ms. 3307, fol. 59r.

As in the Cologne manuscript, the figures of the constellations follow their descriptions in the text. Just as the textual descriptions are simple enumerations of the stars that compose the individual constellations, so too have the miniatures been reduced to the most essential elements. Whereas Hercules in the Cologne manuscript strode forcefully toward serpent and tree, in an explicit allusion to his labors (see fig. 39), in Madrid he appears in isolation, if still wielding his club and carrying his lion's pelt (fig. 44). Narrative content is retained only when required by the accompanying star cata log. For example, Perseus still carries the head of the Gorgon, which is explicitly mentioned in the accompanying description (fig. 45).[70] Thus the constellation cycle betrays a rationalizing impulse that reduces the figures to those forms necessary to locate the individual stars.[71]

The remaining three manuscripts may be dealt with more briefly. Saint-Denis was located in that monastery by 885 (*terminus ante quem*) and occasionally cites 859 as the present year (*terminus post quem*).[72] The drawings are executed in ink, with extensive use of wash used to model the figures; the effect can be quite compelling, as in the elegant figure of Virgo (fig. 46). They also clearly depict the individual stars as small circles radiating short lines interspersed with dots. Monza and Saint-Quentin are closely related: either one is a copy of the other, or they share a common prototype.[73] Saint-Quentin was located in the abbey of that name by the end of the ninth century.[74] The only clear dating criterion is a *terminus post quem* of 827.[75] The Monza manuscript probably originated in the Abbey of Lobbes and was copied between 868 and 885.[76] In both Monza and Saint-Quentin, the constellations are depicted by simple ink drawings without the color of Madrid or the extensive ink washes of Saint-Denis. Modeling is achieved through sparing use of cross-hatching, and the positions of individual stars are not indicated (e.g., fig. 47, from Saint-Quentin).



Virgo habet ſtellam in capite obſcuram .i. In ſingulis umeris ſingulas In ſiniſtra alia obſcuram .i. In dextra alia .i. in ſingulis cubitis ſingulas. In ſingulis manib; ſingulas. in ſiniſtra clariorem quae uocat spica; in tunica obſcuras .vi. In ſingulis pedibus ſingulas ſūma xviii



Geminorum unius qui iuxta cãcrum eſt. habet ſtellam in capite clarã .i. in ſingulis umeris ſingulas claras. In dextro cubito .i. In ſingulis genib; ſingulas. in pedib; ſingulis ſingulas. fiunt viii.
Alter habet in capite in manibus ſingulas. in ſiniſtro cubito .ii. In ſummitate manus .i. In ſiniſtro genu .i. In pedib; ſingulas. Iuxta ſiniſtrum pedem .i. quae uocatur propus fiunt x

FIGURE 46
Boötes and Virgo. Aachen Encyclopedia of 809. Probably Saint-Denis, ca. 859. 29 × 27 cm (full folio). Vatican City, Biblioteca Apostolica Vaticana, Reginensis latinus 309, fol. 93r. © 2017 Biblioteca Apostolica Vaticana.

The early distribution of the Aachen Encyclopedia tracks the gradual decentralization of the Carolingian *capella*, whose officials supervised both the notarial work of the chancellery and the regular observance of the divine service.[77] Hildebald of Cologne served Charlemagne and Louis as first chaplain until his death in 818, thus providing administrative continuity between the two reigns.[78] Likewise, although Charlemagne's will specified that his own books were to be auctioned off, the capella was to be "kept intact and not suffer any division."[79] As we have seen, the prototype of the Aachen Encyclopedia was maintained after Charlemagne's death. Hildebald was primarily resident in Aachen, as were his successors, Hilduin and Fulco.[80] Around 835, Fulco was succeeded as arch-chaplain by Drogo, the Bishop of Metz and the illegitimate son of Charlemagne.[81] Drogo was not relieved of the duty of residence at his episcopal see.[82] As we have seen, the second set of miniatures in the Madrid manuscript resembles one of Drogo's Metz commissions. In 834, Drogo's brother, Hugh, was appointed as *summus sacri palatii cancellarius* (arch-chancellor), the second-highest office within the capella and the direct supervisor of the court notaries. At around the same time, Hugh also became abbot of Saint-Quentin, where a new copy of the encyclopedia was produced at some point after 827.[83] The fragmentation of the empire after the death of Louis in 840 led to a proliferation of capellae. The Abbey of Saint-Denis, where a copy of the encyclopedia was produced after 859, was closely associated with the capella of Charles the Bald.[84] Finally, the Monza manuscript was produced in Lobbes in the period when a series of Carolingian sovereigns served that monastery as lay abbots.[85]

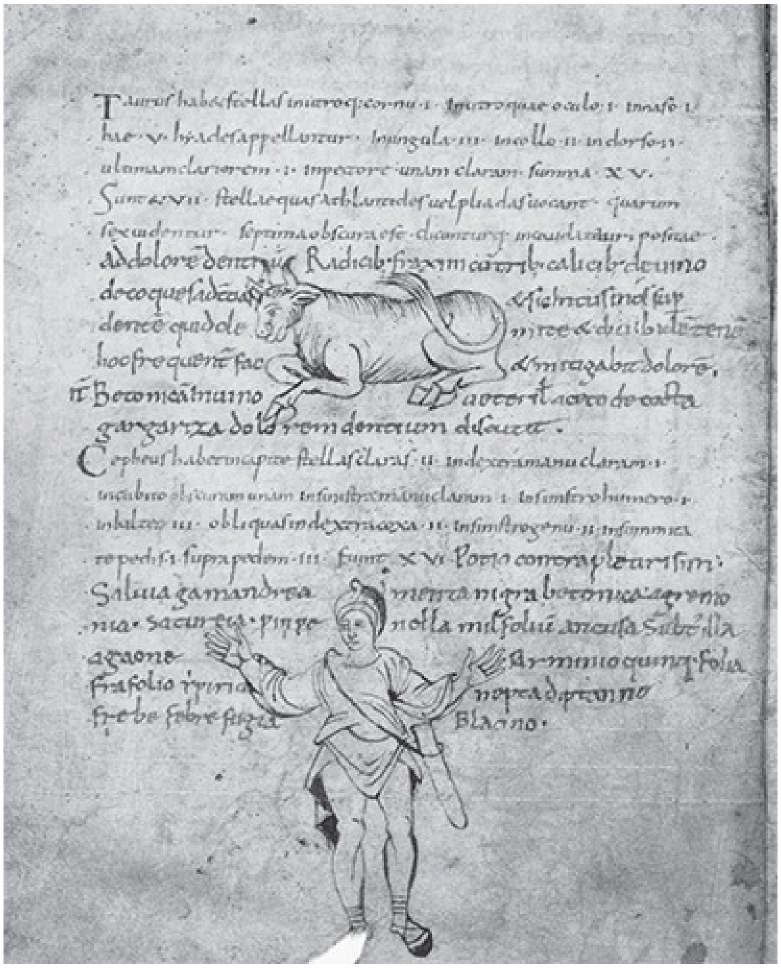


FIGURE 47
Taurus and Cepheus. Aachen Encyclopedia of 809. Probably Saint-Quentin, mid-9th century. 19 × 16 cm (full folio). Vatican City, Biblioteca Apostolica Vaticana, Vaticanus latinus 645, fol. 59v. © 2017 Biblioteca Apostolica Vaticana.

The Aachen Encyclopedia could be used both to determine the dates of church feasts and to produce official documents, such as charters, whose date clauses recorded the day and month of a transaction according to multiple calendrical systems.[86] Perhaps it served as a handbook for multiple Carolingian capellae. This would explain both its wide distribution and the absence of any explicit reference to the court: its distribution was driven more by praxis than by propaganda. However, it cannot explain the evident need for images of the constellations. Nor are the illuminations the only elements of the encyclopedia that exceed its practical utility in the interest of a broader comprehensiveness. This comprehensiveness was both chronological, as in the chronicles that spanned the ages of the world from Adam to the present, and spatial, as in the discussion of the size of the universe. In other words, these volumes present the entire world as a rational and comprehensible whole. Elements of obvious practical value, in particular the computistical, are set within a framework that gives a higher purpose to the day-to- day practice of governing.

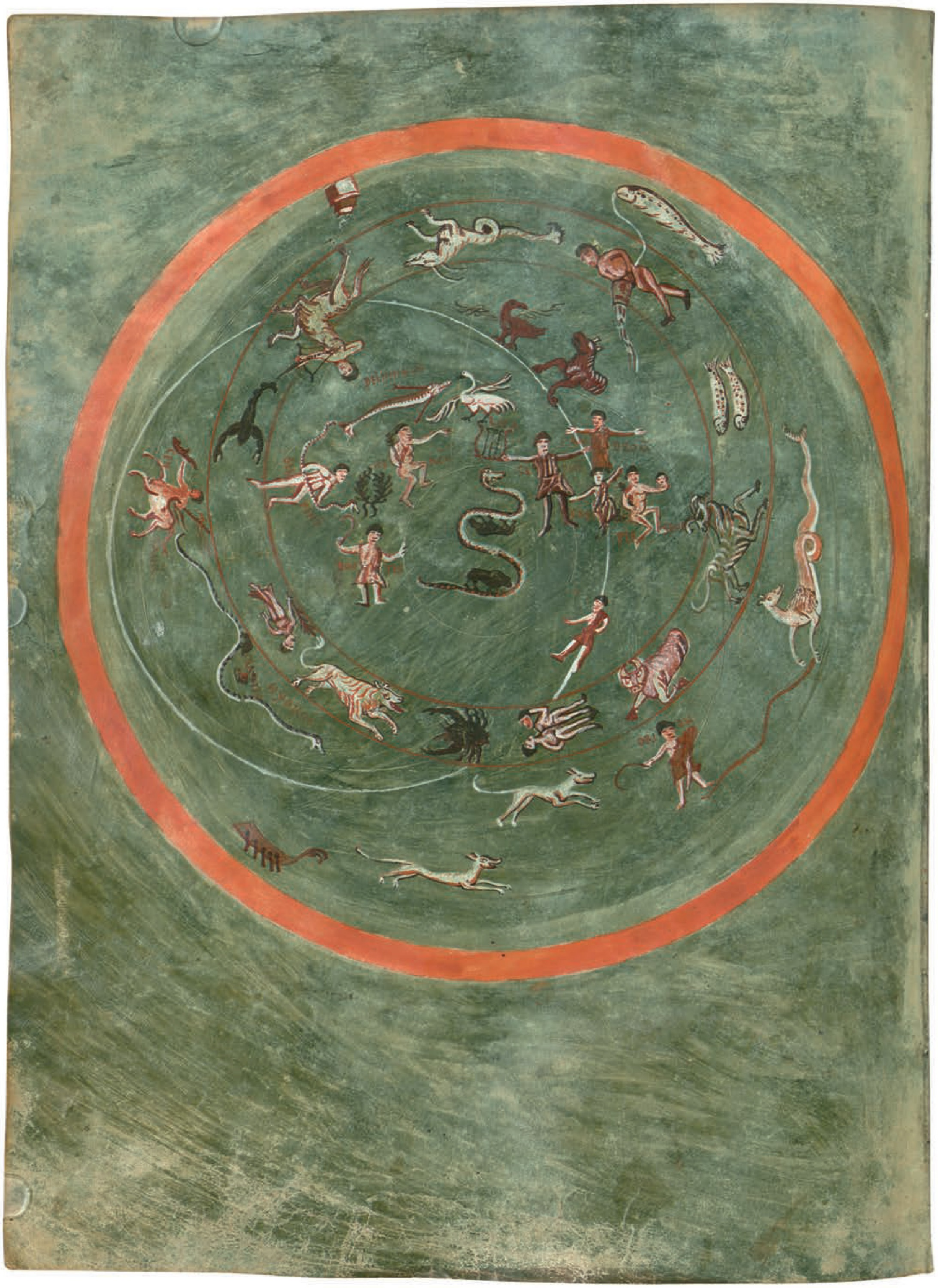

Delfinus

FIGURE 48

Planispheric celestial map. Collection of astronomical-computistical and natural-scientific texts. Region of Salzburg, 818. 32 × 23 cm (full folio). Munich, Bayerische Staatsbibliothek, Clm 210, fol. 113v.

Viewed in this perspective, it is not the presence of the constellation images that is surprising but the absence of a celestial map. As we have already seen, such an image may have been planned for the Cologne manuscript of 805. Similarly, the Madrid manuscript contains two incomplete diagrams that must have been intended as celestial hemispheres: a circle divided into two hemispheres and six latitudinal zones, and the scored outline of a circle.[87] It was left, however, for the manuscripts of the fourth cluster to pair the individual figures of the constellations with a view of the firmament as a whole.

THE BAVARIAN COMPENDIA

The final cluster consists of two nearly identical manuscripts that were copied in Bavaria in the second decade of the ninth century. The first, preserved today in Munich, gives the present year as 818, and its production has been localized in Salzburg or its surroundings (perhaps the abbey at Mondsee).[88] Annalistic entries indicate that it had arrived in the abbey of St. Emmeram in Regensburg by the later ninth century. The second manuscript, preserved today in Vienna, may also be dated to 818, when it was copied in Salzburg, where it likely remained in the episcopal library until secularization.[89] The Munich manuscript was copied by multiple hands, while one scribe copied the entirety of the Vienna manuscript; furthermore, the miniatures of Munich are of appreciably lower quality than those of Vienna. On these grounds, Borst plausibly argued that Munich is a “rough draft” from which the “perfect copy” of Vienna was prepared.[90]

Both manuscripts contain an anthology divided into 115 chapters, with four primary sources: Bede’s *De temporum ratione*, the Aachen Encyclopedia, and two computistical handbooks of the eighth century. They are therefore compilations made out of compilations, and they represent both the summation of a century of computistical debate in Frankish lands and “the final and complete victory of Bede’s computus” over Isidore’s.[91] The decorative program also builds upon those of the earlier handbooks. In both manuscripts, the primary figural elements are, in order of appearance: a full-page miniature depicting the labors of the months, a planispheric celestial map, an Aratean cycle, two planetary diagrams, a series of five diagrams accompanying an extended excerpt from Bede, and a final full-page miniature depicting the courses of the sun and moon through the ring of the zodiac (discussed above; see fig. 24). Of these six elements, only the Aratean cycle and the planetary diagrams could have been borrowed from the Aachen Encyclopedia. The remaining four are additions to, or indeed improvements over, the prototype. Although the Bavarian compilers had access to a copy of the Aachen Encyclopedia, it was not sufficient to their purposes.

Perſeuſ hab& ſtellaſ in ſingulis umeris ſingulaſ claraſ. Indextra manu claram·i· Inſiniſtra manu inqua caput gorgonis ten&·ii· Inuentre·i· Indextro latere clarā·i· Ingenu·i· Inpede clara·i· Inſiniſtro femore clarā·i· Intibia·ii·

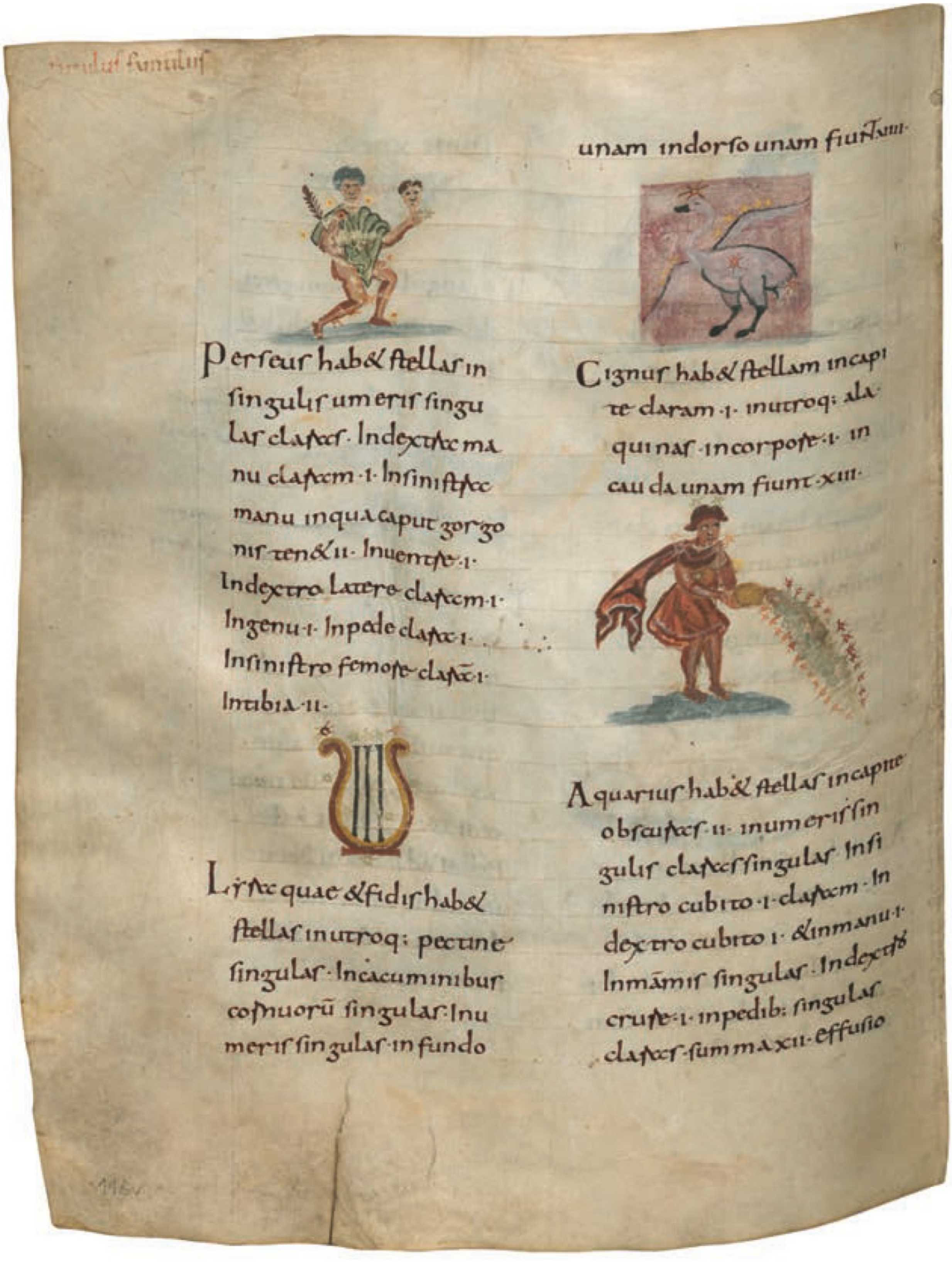
Lyra quae & fidiſ hab& ſtellaſ inutroq; pectine ſingulaſ· Incacuminib; cornuorū ſingulaſ· in umeriſ ſingulaſ· infundo unam Indorſo unā fiunt·viii·

Cignuſ hab& ſtellam in capite claram·i· In utroq; ala quinaſ·incorpore·i· incauda unam fiunt·xiii·

Aquariuſ hab& ſtellaſ incapite obſcuraſ·ii· Inumeriſ ſingulis claraſ ſingulaſ· Inſiniſtro cubito·i·clarā· Indextro cubito·i·& inmanu·i· Inmāmiſ ſingulaſ· Indextro crure·i· Inpedib; ſingulaſ claraſ· ſumma xii· effuſio

FIGURE 49

Perseus, Lyra, Cygnus, and Aquarius. Collection of astronomical-computistical and natural-scientific texts. Munich, Bayerische Staatsbibliothek, Clm 210, fol. 119r.



ſimiliſ ſimiliſ

Perſeuſ hab& ſtellaſ in
ſinguliſ umeriſ ſingu
laſ claraſ· Indextrae ma
nu claram ·I· Inſiniſtrae
manu inqua caput gorgo
niſ ten& ·II· Inuentre ·I·
Indextro latere claram ·I·
Ingenu ·I· Inpede claram ·I·
Inſiniſtro femore clarã ·I·
Intibia ·II·

Lirae quae & fidiſ hab&
ſtellaſ inutroq; pectine
ſingulaſ· Incacuminibuſ
cornuorũ ſingulaſ· Inu
meriſ ſingulaſ· in fundo

unam indorſo unam fiunt xviii·

Cignuſ hab& ſtellam incapi
te claram ·I· inutroq; ala
quinaſ· incorpore ·I· in
cauda unam fiunt ·XIII·

Aquariuſ hab& ſtellaſ incapite
obſcuraſ ·II· inumeriſ ſin
guliſ claraſ ſingulaſ· Inſi
niſtro cubito ·I· claram· In
dextro cubito ·I· & inmanu ·I·
Inmãmiſ ſingulaſ· Indextro
crure ·I· inpedib; ſingulaſ
claraſ· ſumma ·XII· effuſio

116v

FIGURE 50
Perseus, Lyra, Cygnus, and Aquarius. Collection of astronomical-computistical and natural-scientific texts.

Salzburg, 818. 32 × 25 cm (full folio). Vienna, Österreichische Nationalbibliothek, Cod. 387, fol. 118v.

The most striking addition is the planispheric celestial map, a projection of the sphere of the fixed stars onto a single sheet.[92] The image is listed as Chapter 100 (“De circulis signifieri”) in both tables of contents, but only the miniature in Munich is preserved (fig. 48), where it faces Chapter 101, a text that describes the spatial interrelations of the constellations.[93] A green ground covers the entire page, and the space of the celestial sphere is delimited by a thick orange circle. The figures of the constellations are executed in reds, browns, and greens. The interior of the map is structured by eccentric and concentric circles. The concentric circles were not painted but were scored with the compass, and include, for example, the “circle of constant visibility” around the northern celestial pole, within which the serpent and the two bears appear. Among the eccentric are the two red circles delimiting the ring of the zodiac and a white circle marking the Milky Way. Many of the constellations are accompanied by dark red tituli, which are difficult to distinguish against the green ground. The individual stars are not marked.

The text on the positions of the stars is followed by the same catalog of forty-two constellations included in the manuscripts of the third cluster, with accompanying figures. This Aratean cycle occupies thirteen sides in the Munich manuscript and nine sides in the Vienna manuscript, but the layout of both is identical: the discrepancy reflects the loss of two folios from Vienna. Compare, for example, two corresponding folios from Munich (fig. 49) and Vienna (fig. 50). Not only do the images and texts occupy the same relative positions, but in both cases the final line of the description of Lyra is stranded at the top of the second column. The comparison supports Borst’s hypothesis that Munich was the rough draft for Vienna, whose scribe has squeezed the concluding number, “VIII,” at the end of this line so as not to fall behind the exemplar.

The layout of the Aratean cycle marks another innovation. In the Cologne manuscript and the manuscripts of the third cluster, the constellations appeared after the corresponding texts, but in the Bavarian manuscripts they were placed before. The Aratean cycle is furthermore the only non-tabular text in the compilation that is copied in two columns per side. This is a form of spatial rationalization. Since most of the miniatures of the Aratean cycle consist of a single figure, in the earlier manuscripts they were bracketed by large areas of empty parchment. The “waste” was noted by later users of Saint-Quentin, who used the empty space on either side of multiple constellation figures to enter additional tables and texts (see, e.g., fig. 47). A final innovation involves the treatment of the stars in the Bavarian manuscripts. Although individual stars are also marked in Laon and in some copies of the Aachen Encyclopedia, the Bavarian manuscripts introduce internal differentiations corresponding to the textual descriptions. Thus, for example, the two stars that make up the left hand of Perseus, in which he holds the Gorgon's head, are distinguished by color from the remaining stars (see figs. 49 and 50).

The planispheric map and the innovations in the Aratean cycles seem to represent conscious improvements over earlier compendia. The decoration of these manuscripts functions as a fully integrated and carefully considered element of the whole, suggesting extended experience with early handbooks and consideration of their shortcomings. The question naturally arises of who commissioned them, and to what purpose. Nearly every commentator has inferred the patronage of Arn of Salzburg from annalistic entries, found only in the Vienna manuscript, that refer to his ordinations as abbot and as bishop.[94] Arn was a regular at Charlemagne's court, the third bishop to witness his will in 811, and a participant in the ongoing debates surrounding the computus.[95] If indeed the Munich manuscript were copied at the abbey of Mondsee, then Hildebald, who served there as abbot, could also have been involved in its production.[96]

The involvement of court insiders should not, however, distract from the local significance of the two manuscripts.[97] Arn himself was a descendant of the local Bavarian aristocracy and served as a mediator between indigenous elites and imperial authority.[98] Both manuscripts were produced immediately after the *Ordinatio imperii* of 817, in which the young son of Louis the Pious (the future Louis the German) was promised the east Frankish lands, with Bavaria at their core. The implicit promise of administrative autonomy was eventually realized with the establishment of Louis the German's own capella around 830.[99] More generally, the limited regional distribution of the Bavarian compendia stands in contrast to their ambition to improve upon a handbook with pretenses to comprehensiveness and universality. Regional elites exercised considerable freedom in adapting the model of the Aachen Encyclopedia to their own purposes.

A DISTRIBUTIVE APPROACH TO KNOWLEDGE

In presenting these four clusters of manuscripts in order of increasing complexity and ambition, I do not mean to imply a chronological development from the "early" monastic handbooks to the "mature" Bavarian compendia. Even if the evidence for dating the individual manuscripts were sufficiently refined to propose such a high-resolution chronology, it would probably reveal a variety of parallel tracks that occasionally intersected but could also follow independent courses. As it stands, the available evidence cannot preclude that (for example) the monastic handbook in Munich, the manuscript in Laon, and the hypothetical prototype of the Aachen Encyclopedia were all produced in the same year.

Nor would it be correct to say that all manuscripts were created with the same goal in mind. Those of the first cluster, for example, betray far more parochial concerns than those of the other three. The aim in the monastic handbooks was not to establish a system that could unite disparate institutions and locales but rather to meet the needs of specific small-scale communities. The manuscripts of the second cluster share some contents with those of the first, but they simultaneously betray a desire for a logical system based on integral and authoritative sources that might subsume those local concerns under a more capacious, rationalized structure. The initiative behind the Aachen Encyclopedia must have issued from a similar rationalizing drive. What distinguishes the manuscripts of the third cluster from those of the second is not so much their intended function as the success of the Encyclopedia as an exemplar. If its distribution was related to the business of the capellae, then this success was not based on a programmatic imperial campaign to disseminate an authoritative compendium but on its adoption within an administrative framework whose gradual geographic decentralization required the production of multiple copies.

The fourth cluster poses the most intriguing questions. On the one hand, the Bavarian manuscripts betray the clearest understanding of the potential utility of the Aratean cycle. Each constellation figure is keyed to its description on three interconnected levels: the individual stars, the intermediate groupings, and the constellation as a whole. Moreover, the Bavarian compendia meet a need that was expressed, but not fulfilled, in the planning of the Cologne and Madrid manuscripts: the inclusion of a celestial map that labels and represents the individual constellations as they appear in the firmament. It therefore represents the peopled sphere across the full continuum of possible scales: from the individual star, through the isolated limb, to the entire figure, all the way up to the teeming empyrean. These two manuscripts fully realize one possible function of the cosmic image, namely to connect the smallest possible element with the largest, just as their metrological excerpts linked the extent of a single field to the size of the whole earth, and their computistical formulae linked a single day with the entire span of creation.[100]

Remarkably, the very manuscripts that execute this task better than any of their kin were not the fruits of a centrally directed imperial initiative but of a regionally circumscribed undertaking. Similarly, the copies of the Aachen Encyclopedia that found their way to the monasteries of Prüm, Saint-Quentin, and Saint-Denis were not held sacrosanct as relics of imperial power but instead served local scribes who copied in their margins events of local and global significance alike. “Ansbaldus abba obiit et Farabertus eius successit, et Carolus imperator tercius huius nominis obiit,” as a scribe at the Abbey of Prüm wrote in the margin of the Madrid manuscript’s Easter tables under the year 886, with the death of the local abbot and the name of his successor taking priority over the death of Emperor Charles (“the Fat”), third of his name.[101]

Therefore the computistical compendia do not reveal the imposition of an authoritative spatial and temporal framework, but its gradual emergence through a regional-imperial dialectic of mutual recognition. Although this process transpired in the context of the Carolingian enterprise of state building, its fruits survived the ultimate fragmentation of the state. The manuscripts allowed people to inscribe themselves within a universal framework, while also forcing them to recognize the existence of numberless peers in far valleys, many weeks’ walk from home. As Arno Borst observed, “which saint was venerated in the village church, which star was visible over the neighboring hill— local worthies knew these things without the help of the handbooks. But now they had to learn that behind the furthest mountains, and under the strangest stars, dwelt creatures just like them, who directed their daily labors according to the same temporal scales.”[102]

Just as the manuscripts mediated a relationship between region and empire, so too did their illustrations mediate a relationship between individual and community, star and cosmos. The distribution of the constellation images in such a fitting context promoted their familiarity across a broad geographic expanse and among members of various overlapping elites: courtly, aristocratic, ecclesiastic, and monastic. It also lent them a potency that transcended their immediate referents, be they astral or mythological. It produced, in other words, the conditions assumed by the cloth of the Ewaldi, under which an image of the cosmos could constitute a community.

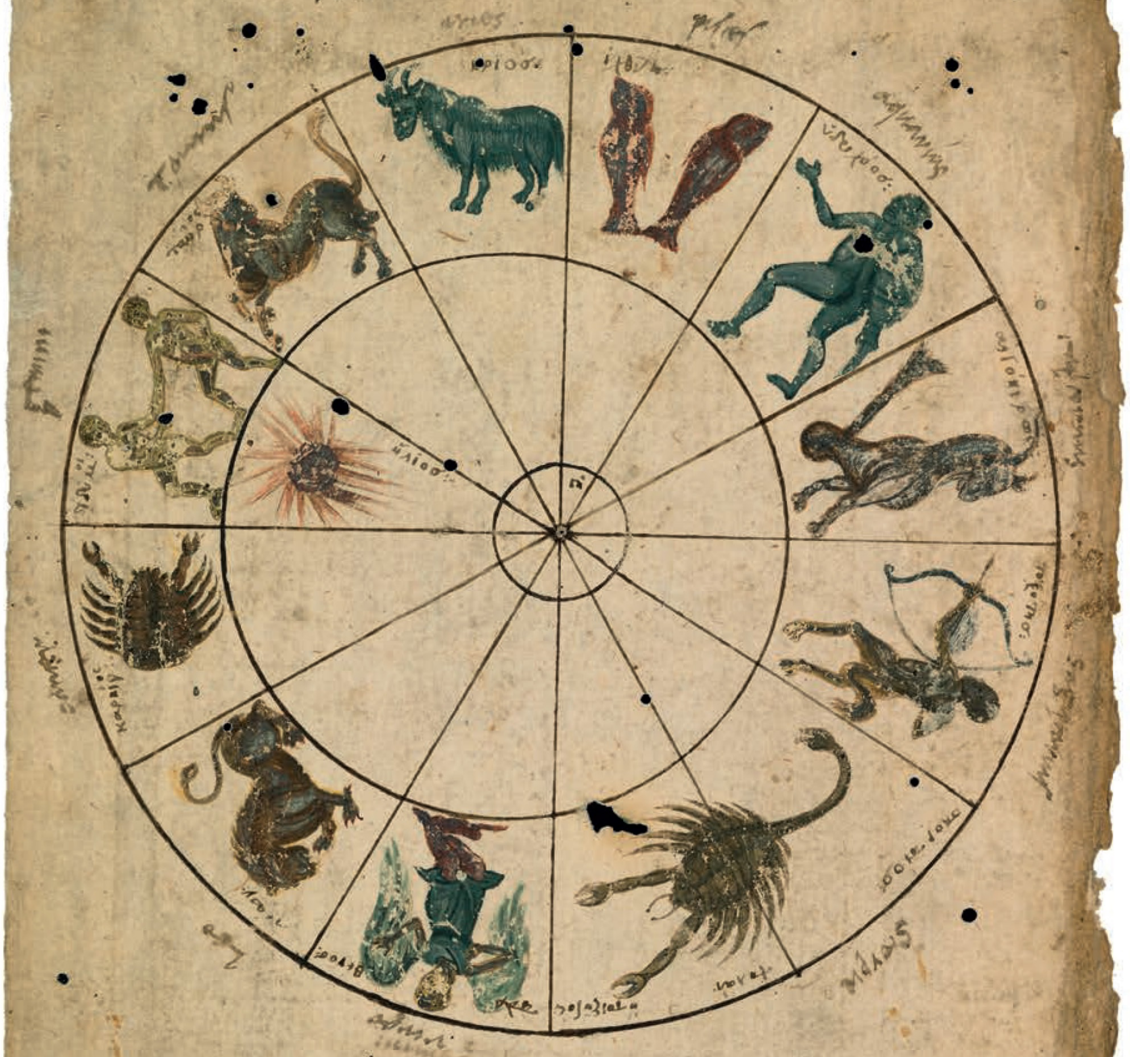
Frankish production of astronomical manuscripts between 800 and 820 presents the clearest case for the mutual dependence of the political and didactic functions of cosmological imagery in the early Middle Ages. Much more than such isolated, albeit spectacular, monuments as Charlemagne’s silver table or the Star Mantle of Henry II, these manuscripts established knowledge of the constellations as a patch of common ground shared by various European elites. But although an image of the cosmos could serve as an element of a common identity, it could also become an object of disagreement and contention. Knowledge could be shared, but it could also be hoarded. It is to these latter possibilities that we turn in the final chapter.

4 Byzantine Dissensus

A stray parchment leaf tipped into the front of a fourteenth-century manuscript now in the Bodleian Library at Oxford preserves a rare Byzantine rendition of the zodiac (fig. 51).[1] The circle is divided radially into twelve sectors and circumscribes two additional circles, of which the larger is eccentric and the smaller concentric. A titulus identifies the inner circle as the earth while one sector of the eccentric circle contains a fiery ball labeled as the sun. Although the outer ring contains Greek tituli naming the twelve signs of the zodiac, only eleven signs seem to be depicted. At bottom right, both the field labeled "scorpion" and the adjacent field with the titulus "the claws or the yoke" are filled by the figure of an arachnid. A later user who entered the Latin names of the constellations outside the circle recognized Scorpio but left the space by the "claws" blank, perhaps perceiving the zodiac as defective. In fact, the diagram preserves an ancient version of the zodiac as conceived by classical and Hellenistic scholars: Aratus, for example, still positioned "the Claws" between Virgo and Scorpio.[2]

The archaism of the Bodleian leaf is typical of later Byzantine depictions of the zodiac, which often rely on models either very old or foreign. Just as the monumental ubiquity of the zodiac in high medieval Islamic and European art provides a retrospective insight into early medieval developments, so too for the distant borrowings that characterize high medieval Byzantine representations of the zodiac. Take, for example, a manuscript now in the Vatican that was copied in the circle of, and corrected by the very hand of, the scholar Nikephoros Gregoras (b. 1290/1).[3] It contains works by Gregoras himself and by his teacher, Theodore Metochites; selections from Theon of Alexandria's commentary on the *Almagest* of Ptolemy; and a set of astronomical fables related to the *Catasterisms* of Eratosthenes.[4] The texts of the fables bracket a cycle of astronomical images, many accompanied by brief captions in Gregoras's hand: individual constellations, the five planets and the Milky Way, the zodiac around the heads of the sun and the moon, the constellations of the winter and summer hemispheres, and the celestial globe in planispheric projection.[5] These ink drawings, confidently delineated and modeled with cross-hatching, include many figures familiar from the Carolingian manuscripts discussed in the previous chapter, such as Hercules battling the serpent (fig. 52).[6] Indeed, iconographic analysis of the series suggests that its direct model was a late antique copy of Aratus. Thus this Vatican cycle, like the Bodleian zodiac, is a kind of archaism: the most faithful preserved witness to the ancient Aratean cycle prior to its adoption and adaptation in early medieval Europe.[7]

Arch. D. 20: olim Arch. A. 146.



ἰστέον δὲ καὶ αὐτῶν [illegible] τῶν ζῳδίων [illegible] ἡλιακὰς τροπὰς κατὰ [illegible]
καὶ ἰσημερινὰ σημεῖα, δύο τροπικὰ καὶ [illegible] τῶν τε
ζῳδίων [illegible] ἰσημερινῶν σημείων, πλὴν αὐτὰ [illegible]
ἡμετέρα ὅτι. ἅμα δὲ καὶ [illegible] αἰθέρος καὶ [illegible]
ἐν τοῖς τοῖς ζῳδιακοῖς σημείοις τοῦ ἡλίου

Sophocliis { Αἴας
Ἠλέκτρα
Οἰδίπους }

Euripidis { Ἑκάβη
Ὀρέστης
Φοίνισσαι }

Iste liber pertinebat magistro Johanni ffree de Bristollia nato qui obiit in curia Romana. postea devenit ad manus Willelmi Wyrcestre, [illegible] de Bristollia mediante [illegible] domino Johanne [illegible] capellano cum domino [illegible]

FIGURE 51

Zodiac. Anthology of tragedies with scholia, and other texts. Constantinople, 14th century. 22.5 × 14.5 cm (full folio). Oxford, Bodleian Library, MS. Auct. F. 3. 25, fol. 1v.

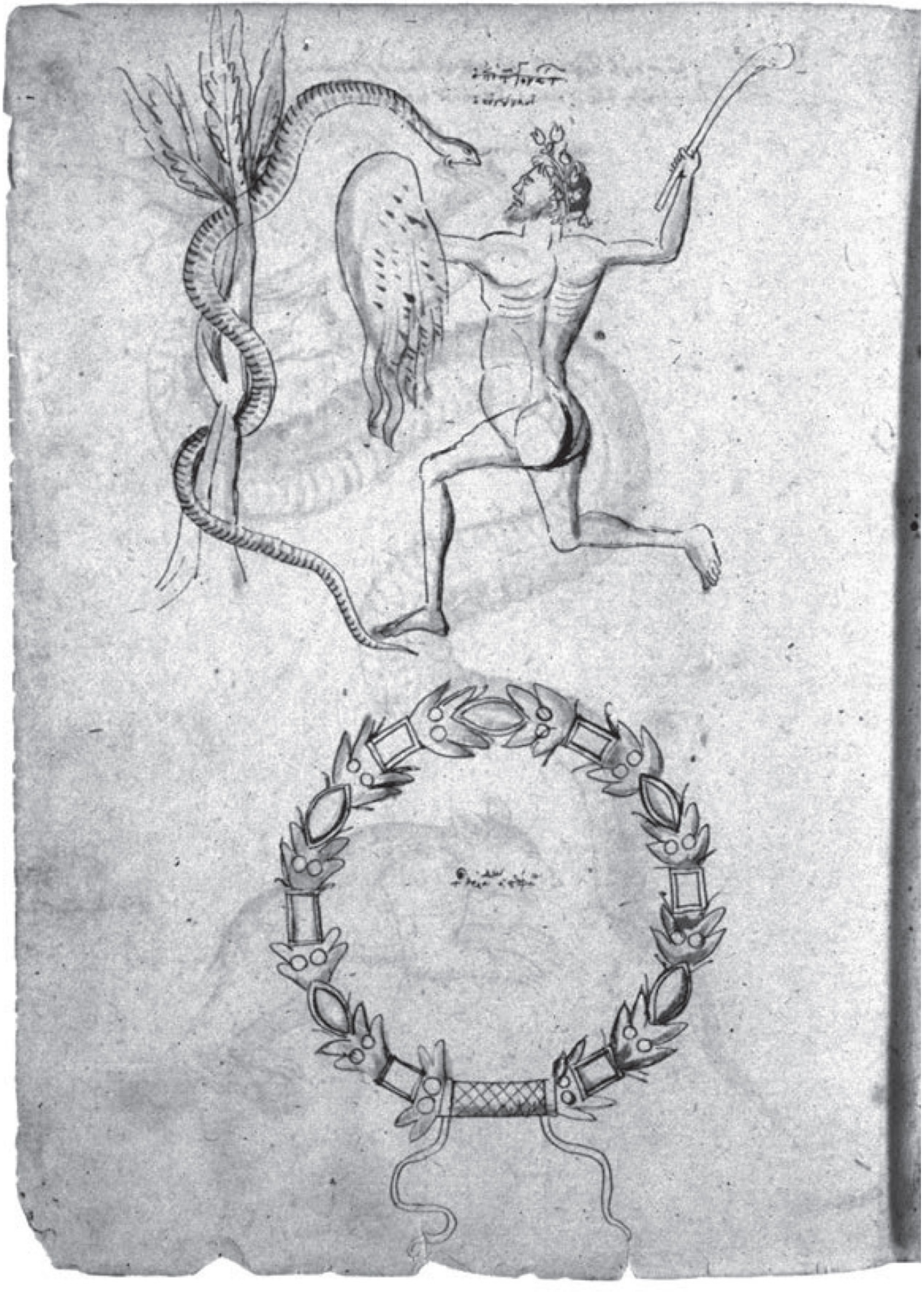


FIGURE 52
Hercules and Corona. Compendium of astronomical texts. Constantinople, second quarter of the 14th century. 31.5 × 23 cm (full folio). Vatican City, Biblioteca Apostolica Vaticana, Vaticanus graecus 1087, fol. 305v. © 2017 Biblioteca Apostolica Vaticana.

Evidence for the use of foreign models appears in a manuscript of Theon of Alexandria’s commentary on the *Handy Tables* of Ptolemy that was produced around 1358, probably in Constantinople. It contains a series of illuminations of the planets, depicted “sitting on or carrying the symbols of the zodiacal signs that are their astrological houses, exaltations, and, in some cases, dejections” (for example, fig. 53). The cycle has no precedent in earlier Byzantine art but finds close comparanda in Islamic lands.[8] The manuscript may have been executed for a patron who wanted an illuminated copy of a text which, although often copied by Byzantine scribes, was not traditionally illustrated. To meet the demand, a tradition from a neighboring cultural sphere was borrowed. In this respect, one may compare an illuminated Georgian astronomical treatise of the twelfth century whose miniatures are copies of the cycle of al-Sufi.[9] Whereas the religious painting of Georgia drew much of its inspiration from Byzantium, the Islamic world was a more fruitful source of astronomical iconography.

116v

ξε

κανὼν ἀνωμαλίας Διός· ἐπὶ λήψεις μοι λη λʹ:

α	β	γ		δ	ε		ϛ		ζ	
ἀριθμοὶ	κοινοί:	ἐκκ προσθαφαιρε		ξ ξ ἀφαι	διαφορὰ ἀφαιρέσεως		ἐπὶ ☉ προσθαφαιρέσεως		διαφορὰ προσθέσεως	
α	τνθ	ō	ϛ	ξ	ō	ō	ō	ι	ō	ō
β	τνη	ō	ια	ξ	ō	α	ō	κ	ō	α
γ	τνζ	ō	ιε	ξ	ō	α	ō	κθ	ō	α
δ	τνϛ	ō	κβ	ξ	ō	α	ō	λθ	ō	α
ε	τνε	ō	κζ	ξ	ō	β	ō	μθ	ō	β
ϛ	τνδ	ō	λβ	ξ	ō	β	ō	νη	ō	β
ζ	τνγ	ō	λζ	ξ	ō	β	α	η	ō	β
η	τνβ	ō	μβ	ξ	ō	γ	α	ιη	ō	γ
θ	τνα	ō	μζ	ξ	ō	γ	α	κζ	ō	γ
ι	τν	ō	νγ	ξ	ō	γ	α	λζ	ō	γ
ια	τμθ	ō	νη	ξ	ō	δ	α	μζ	ō	δ
ιβ	τμη	α	γ	ξ	ō	δ	α	νϛ	ō	δ
ιγ	τμζ	α	η	νθ	ō	δ	β	ϛ	ō	ε
ιδ	τμϛ	α	ιγ	νθ	ō	ε	β	ιε	ō	ε
ιε	τμε	α	ιη	νθ	ō	ε	β	κδ	ō	ϛ
ιϛ	τμδ	α	κγ	νθ	ō	ε	β	λδ	ō	ϛ
ιζ	τμγ	α	κη	νη	ō	ϛ	β	μγ	ō	ϛ
ιη	τμβ	α	λγ	νη	ō	ϛ	β	νβ	ō	ζ
ιθ	τμα	α	λη	νη	ō	ϛ	γ	β	ō	ζ
κ	τμ	α	μγ	νζ	ō	ζ	γ	ια	ō	η
κα	τλθ	α	μη	νζ	ō	ζ	γ	κ	ō	η
κβ	τλη	α	νγ	νζ	ō	ζ	γ	λ	ō	η
κγ	τλζ	α	νη	νϛ	ō	η	γ	λθ	ō	θ
κδ	τλϛ	β	γ	νϛ	ō	η	γ	μη	ō	θ
κε	τλε	β	η	νε	ō	η	γ	νζ	ō	θ
κϛ	τλδ	β	ιγ	νε	ō	θ	δ	ϛ	ō	ι
κζ	τλγ	β	ιζ	νδ	ō	θ	δ	ιε	ō	ι
κη	τλβ	β	κβ	νδ	ō	θ	δ	κδ	ō	ι
κθ	τλα	β	κζ	νγ	ō	ι	δ	λγ	ō	ια
λ	τλ	β	λα	νγ	ō	ι	δ	μβ	ō	ια

FIGURE 53
Jupiter. Commentary on the *Handy Tables* of Ptolemy by Theon of Alexandria. Constantinople, ca. 1358. 24 × 16 cm (full folio). Milan, Biblioteca Ambrosiana H. 57. Sup. (=437), fol. 116v.

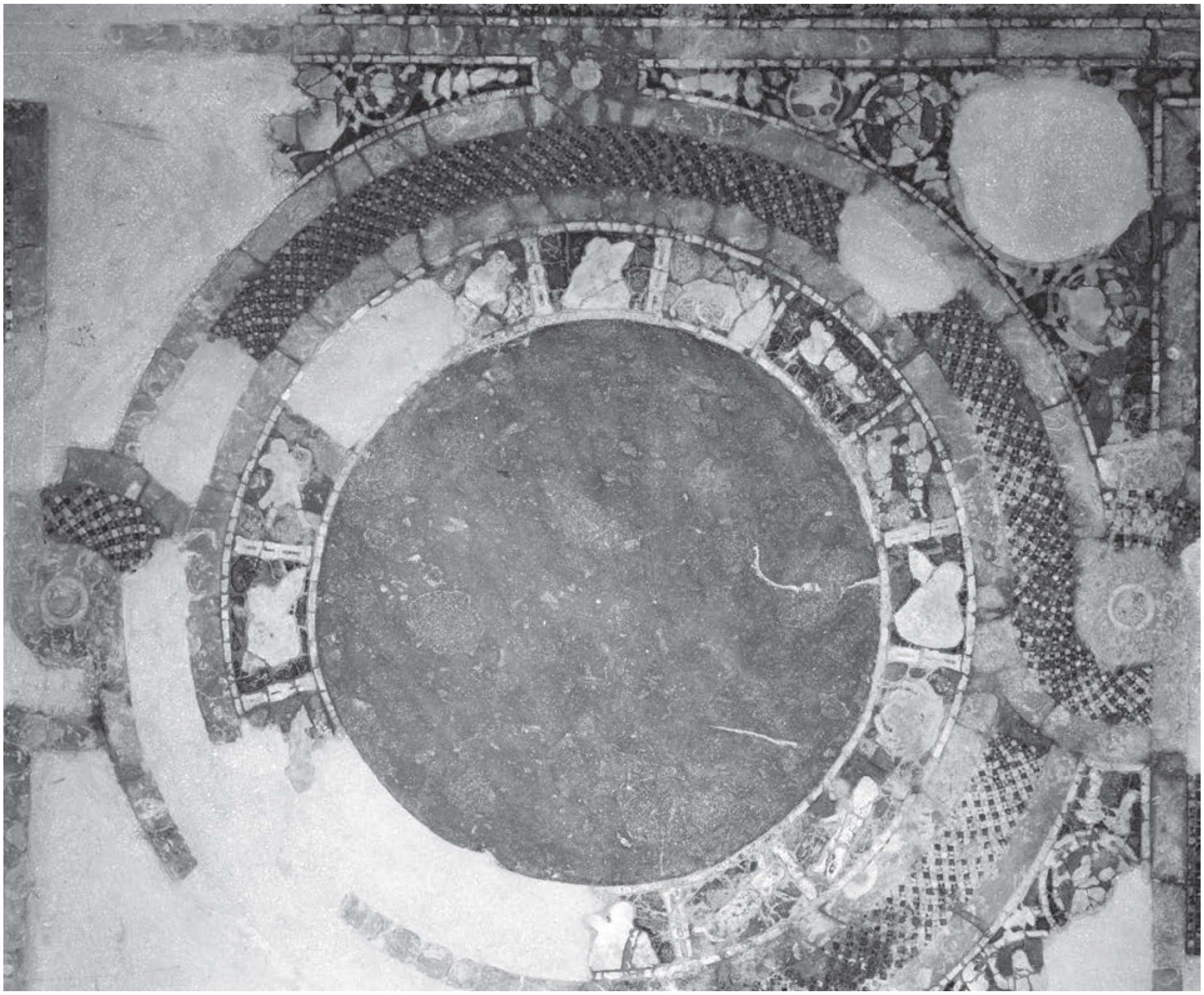


FIGURE 54
Istanbul, Pantokrator Monastery (Zeyrek Camii), south church, opus sectile pavement with representation of the zodiac. 12th century.

The few preserved monumental Byzantine renditions of the zodiac lead to similar conclusions. Consider the opus sectile pavement of the south church of the Pantokrator Monastery in Constantinople, constructed by the imperial couple John II Komnenos (1118–1143) and Irene.[10] In recent decades, the pavement has been hidden by a wooden floor and carpets, so its study depends on photographs taken in the 1950s.[11] Upon entering the naos from the central door of the narthex, the visitor to the church trod upon a large disk surrounded by a wheel containing the figures of the four seasons at the four cardinal points, with the figures of the zodiac placed between them in four groups of three (fig. 54). The remainder of the pavement displayed scenes of farming and the hunt, animals of the land and sea and mythical beasts. At the east, directly in front of the bema and on axis with the zodiac, the pavement displayed a cycle of scenes from the life of Samson. As a whole, the pavement hearkens back to late antique basilicas, presenting an image of “order in the Christian cosmos” that could also embrace the zodiac, whose closest medieval parallels appear on pavements in Italy.[12]

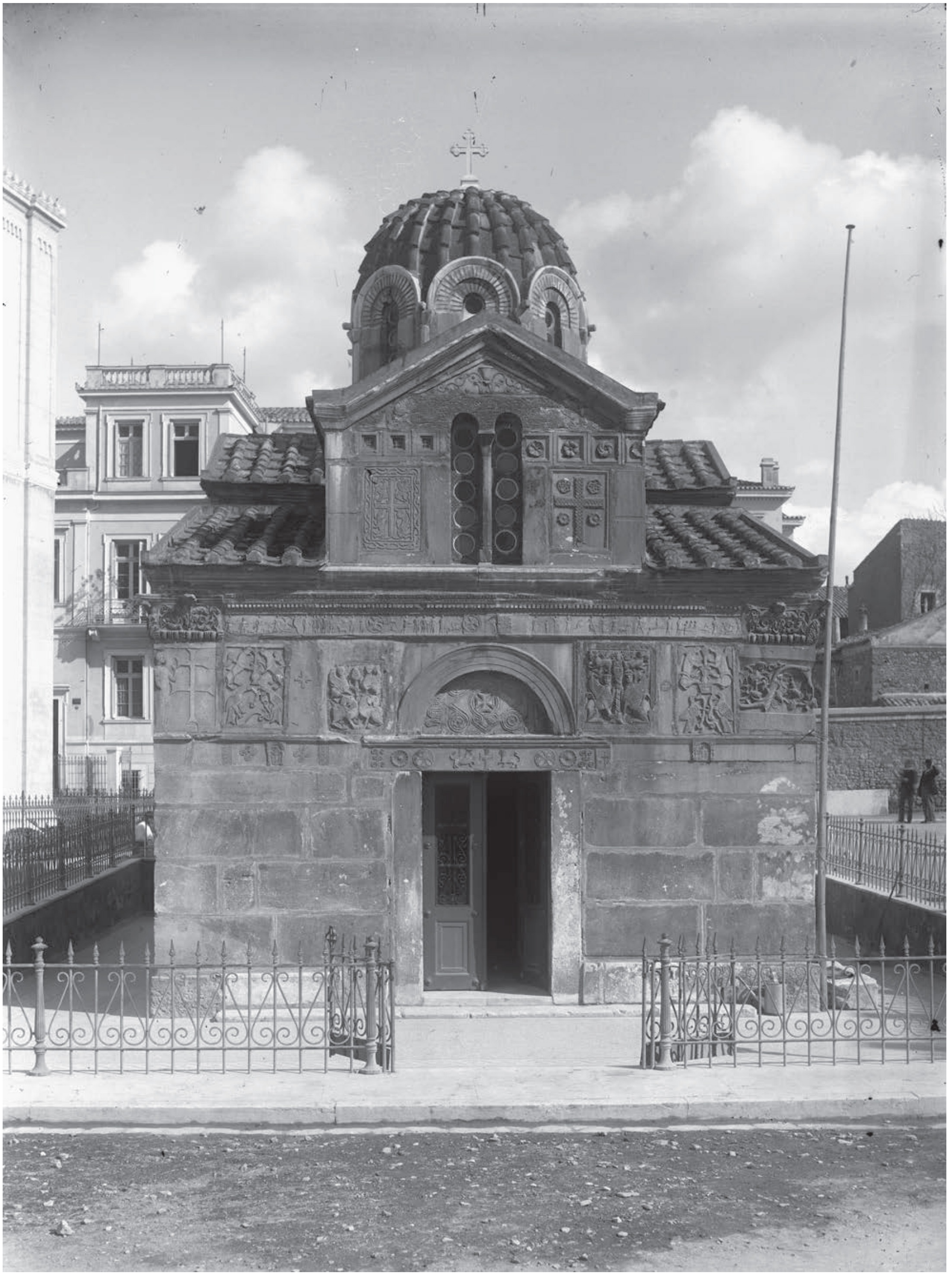


FIGURE 55
Athens, Panagia Gorgoepikoos, western facade.

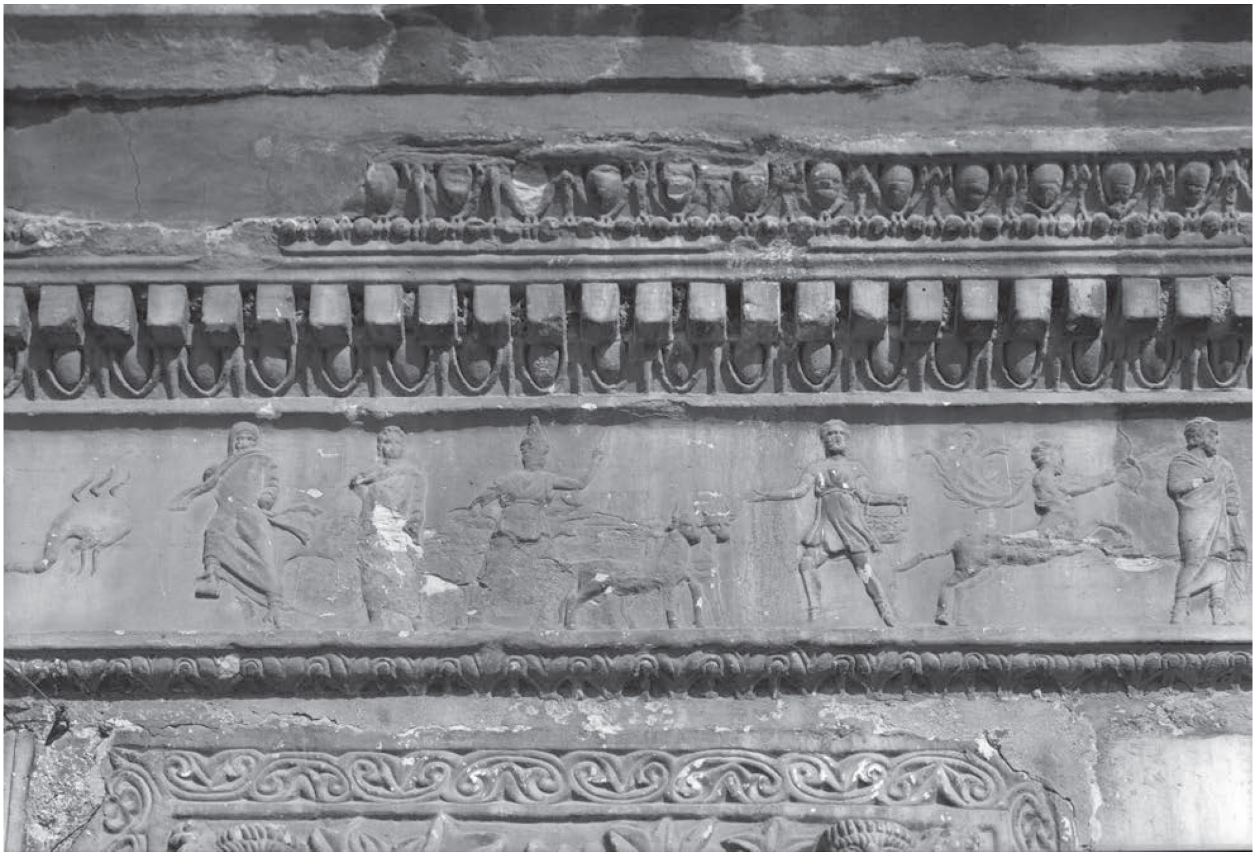


FIGURE 56
Athens, Panagia Gorgoepikoos, western facade, detail of calendrical frieze with figures of Scorpio and Sagittarius. 2nd century.

The zodiac of the Pantokrator finds a more distant echo on the west facade of the church of Panagia Gorgoepikoos (also called the “Little Metropolis”) in Athens (fig. 55). Here an ancient calendrical frieze depicting the signs of the zodiac together with representations of corresponding seasonal religious festivals was set above the entry, as the most prominent among a number of spolia that were displayed on the church’s exterior (fig. 56).[13] Its position at the entrance threshhold bears comparison to that of the zodiac wheel of the Pantokrator. At the same time, its medium and architectural context recall the many Romanesque portals of twelfth-century Europe that featured carved depictions of the zodiac.[14] Panagia Gorgoepikoos has been traditionally dated to the late twelfth or the thirteenth century, although a date in the fifteenth century has also been proposed.[15]

These three manuscripts and two churches do not exhaust the astronomical iconography of Byzantium post-1000. Images of the zodiac are found in two eleventh-century copies of the *Christian Topography* of Kosmas Indikopleustes, a text that was, as we shall see, polemically opposed to the spherical cosmology that the zodiac represents.[16] Other, more eccentric renditions await close study, such as a fourteenth-century miniature in which the twelve signs decorate the tuning pegs of a lyre.[17] Versions of the zodiac may also have appeared in more ephemeral contexts. For example, an eleventh-century poem by Christopher of Mitylene celebrates a loaf of bread baked by his cousin and decorated with the zodiac, apparently in molded relief; the Pleiades, the seven planets, and the four winds, represented by eggs; and the four seasons, represented by "a quartet of pastry finials."[18]

Nevertheless, the Byzantine reception of the ancient constellations was different in kind from the European and the Islamic. The intensive production and distribution of Aratean cycles in early ninth-century Europe formed the basis for a distinct astronomical iconography, whose development continued into the early Renaissance.[19] The cycle of miniatures that accompanied the tenth-century treatise of al-Sufi gave rise to another distinct iconography, which was initially limited to Islamic lands but was adopted in Latin (and, as we have seen, Georgian) scholarly circles by the thirteenth century.[20] By contrast, in Byzantium no comparable iconography generated the broad consensus and attendant momentum of the Aratean and al-Sufi cycles. Instead, later Byzantine astronomical iconography is characterized by sporadic and isolated revivals from deep antiquity and borrowings from abroad— or, in Athens, by a literal spolium.

The difference does not reflect a lack of interest in astronomy and astrology among Byzantine elites. Paul Magdalino has described a rich and unbroken tradition of astrological inquiry among Byzantine scholars and intellectuals from late antiquity through the Palaeologan period.[21] Nor can it be traced to a lack of early medieval models. In this chapter we will examine two Byzantine manuscripts, close contemporaries of the Frankish volumes discussed above, that contain numerous astronomical and cosmological miniatures. However, these manuscripts depict two radically opposed understandings of the shape and mechanics of the universe, the first by now familiar to us, and the second novel. Their opposition helps us to understand why astronomical iconography never achieved the momentum in Byzantine artistic production that it did elsewhere.

THE VATICAN PTOLEMY

We encounter a familiar image of the cosmos in a sizable voume (11 × 7⁷⁄8 in., 28 × 20 cm), now housed in the Vatican, that contains the *Handy Tables* conventionally attributed to the second-century astronomer Ptolemy.[22] Comprising its core are the sixty-six essential tables used to calculate the relative positions of the stars and planets at any given time, beginning with the tables of the right and oblique ascension, and concluding with the catalog of the fixed stars.[23] Additional elements include a table of coordinates of “notable cities,” which is closely related to the list in Ptolemy’s *Geography*.[24] Others have a more recent pedigree, including the tables composed specifically for the climate of Constantinople, perhaps compiled by Stephanos of Alexandria in the early seventh century.[25]

Crucial for the dating of the manuscript is the “royal canon,” a list of rulers beginning with the Babylonian king Nabonassar and continuing up to the emperors of Constantinople that was used to reckon the year as required for certain astrological calculations.[26] The list was maintained through the reign of Alexander (912–913), but a change in hands between Constantine V (741–775) and his successor Leo IV (775–780) suggests a date in Constantine’s reign.[27] However, if the scribe that picked up with Leo and continued through Nikephoros (802–811) also worked on the original tables, then the manuscript would date to the early ninth century.[28]

Parallel efforts to date the manuscript have focused on a diagram (fig. 57), to which we will return below, consisting of five rings around a central figure of the sun. The outermost ring displays the twelve constellations of the zodiac, while the second ring gives the names of the twelve months, each followed by a date. In the third ring, the months are represented by their personifications. The fourth ring follows with the hour, and in the fifth, black-and white-skinned women represent the night and the day, respectively. The diagram functions like an almanac, revealing the date and time at which the sun enters each of the signs in turn: for example, it will enter Aries on March 20, twenty minutes after the end of the fifth hour of the evening.[29] The figures are only valid for certain years, and could have been obtained by a Byzantine astronomer working between the late seventh and early ninth centuries.[30]

Taken together, the royal canon and the solar diagram point to the late eighth or early ninth century. This date would be valid for the majority of the manuscript as currently bound, but not for its first four folios. Analysis of the quire marks reveals that the manuscript originally began with the current folio 5 and did not include the striking “grisaille” paintings of the constellations of the summer (fig. 58) and winter hemispheres.[31] These were bound into the present volume by the fifteenth century but were probably made before 830, the date of an astronomical text on folio 2r.[32]

The Vatican Ptolemy does not include a subscription or a dedication, but an origin in Constantinople is indicated by the tables reckoned for that city's latitude. Furthermore, the royal canon gives an unusually accurate account of the emperors of the seventh century, suggesting "access to authoritative sources" within the imperial bureaucracy.[33] The emperors of the era certainly cultivated the astronomical and astrological knowledge contained in the *Handy Tables.* For example, the chronicle of Theophanes relates the story of Pankratios, a "pseudo-prophet and astrologer" in the service of Constantine VI (780–797), who died in a disastrous battle against the Bulgarians after predicting Byzantine victory.[34] David Pingree reconstructed the procedure behind Pankratios's prediction, which required calculation of the moon's position in relation to Gemini and to Venus and thus a good set of tables.[35] The military manual attributed to Leo VI (886–912) explicitly names the "Handy Table of Ptolemy" among the books that astronomers must know if they are to serve the emperors.[36] A copy of the *Handy Tables* could be used both for the earnest investigation of phenomena and to buttress a fabricated interpretation of a celestial event: Leo VI recommended that commanders learn how to produce "clever interpretations" of those signs that might trigger panic among the troops.[37]

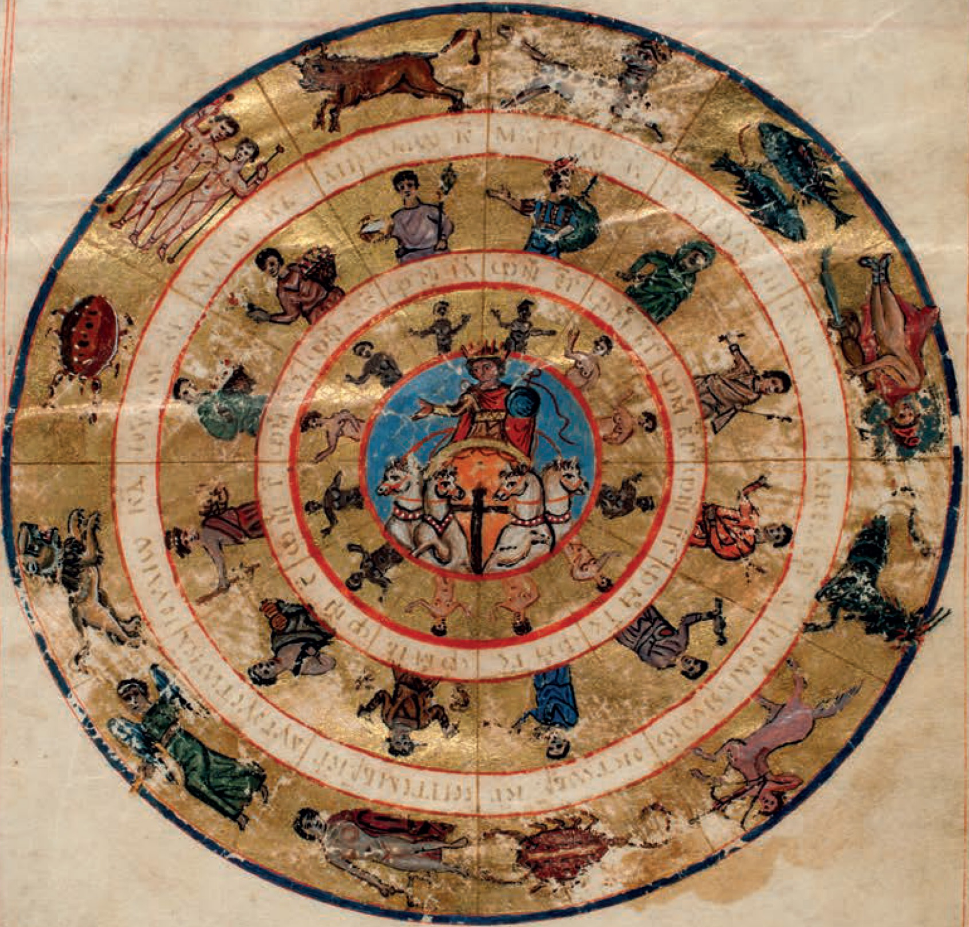
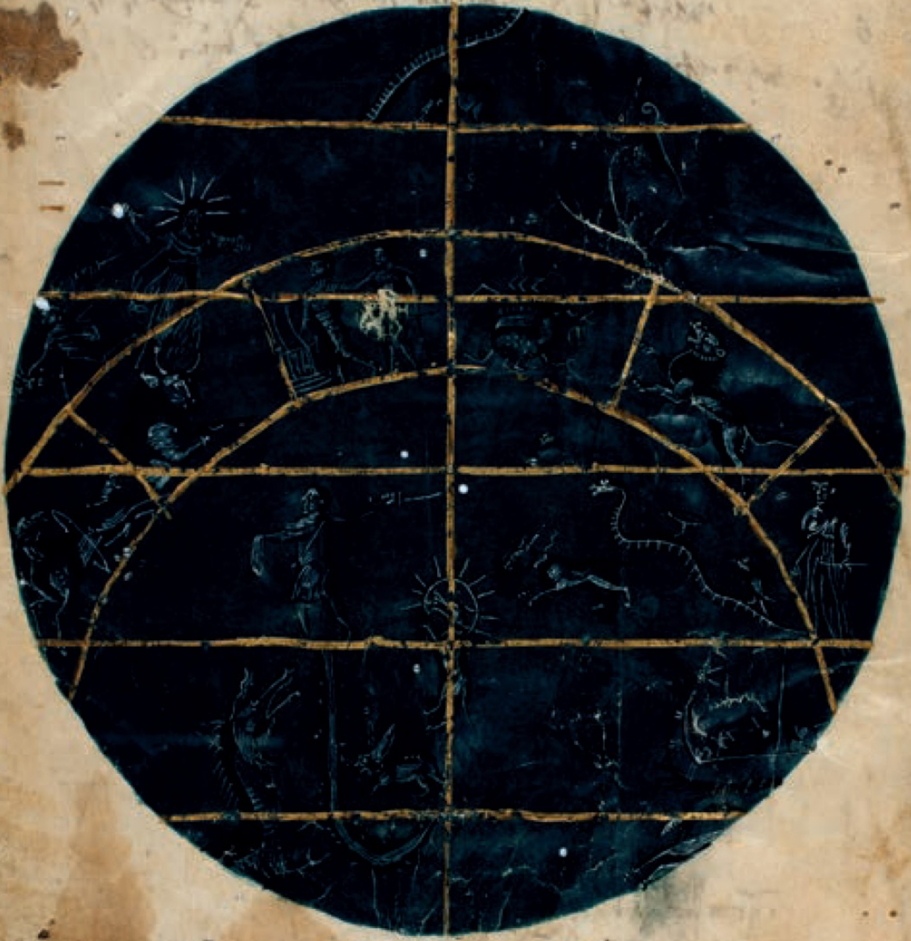


FIGURE 57
Solar diagram. The *Handy Tables* of Ptolemy. Probably Constantinople, 8th or 9th century. 28 × 20 cm (full folio). Vatican City, Biblioteca Apostolica Vaticana, Vaticanus graecus 1291, fol. 9r. © 2017 Biblioteca Apostolica Vaticana.

[illegible]



[illegible]

astran [illegible] le [illegible]bulazz

FIGURE 58
Constellations of the summer hemisphere. Folio later added to the *Handy Tables* of Ptolemy. Before 830. 28 × 20 cm (full folio). Vatican City, Biblioteca Apostolica Vaticana, Vaticanus graecus 1291, fol. 2v. © 2017 Biblioteca Apostolica Vaticana.

The Vatican Ptolemy is one of four preserved majuscule manuscripts of the *Handy Tables* from the eighth and ninth centuries.[38] All share a set of diagrams in common, but the Vatican manuscript is the only copy with figural illustrations, which consist both of full-page diagrams and of figures of the constellations and heavenly bodies painted in lunettes above various tables.[39] The lunettes were executed by two painters with distinct styles. The first was responsible for the tables of the right ascensions, in which the constellations of the zodiac were painted against a blue background (fig. 59), and the second for the tables of the oblique ascensions, in which the signs were painted directly on the parchment (fig. 60).[40] The second painter produced chunkier figures than the first, and animals composed out of clearly defined planes, in contrast to the first painter's more subtly modeled beasts. The change in painters does not correspond to a change in quires

✝ ΟΡΘΗϹϹΦΑΙΡΑϹ. ϹΥΝΜΕϹΟΥΡΑΝΗΜΑΤΙΠΑΝΤΑΧΟΥ

Μ̃	ΑΝΑΦΟΡΑΙ		ΩΡ Ζ	ΩΗ Ζ	ΑΝΑΦΟΡΑΙ		ΩΡ Ζ	ΩΗ Ζ	ΑΝΑΦΟΡΑΙ		ΩΡ Ζ	ΩΗ Ζ
Α	Ϙ	ΝΕ	ΚΒ	ΛϚ	ΡΙΗ	ΜΗ	Ι	ΝΖ	ΡΜΗ	ΜΖ	Ϛ	ΙϚ
Β	ϘΑ	Ν	ΚΒ	ΙΑ	ΡΙΘ	ΜϚ	Ι	Μ	ΡΜΘ	Ν	Ϛ	ΙΘ
Γ	ϘΒ	ΜΕ	ΚΑ	ΜΖ	ΡΚ	ΜΔ	Ι	ΚΔ	ΡΝ	ΝΓ	Ϛ	ΚΓ
Δ	ϘΓ	Μ	ΚΑ	ΚΒ	ΡΚΑ	ΜΒ	Ι	Ζ	ΡΝΑ	ΝϚ	Ϛ	ΚϚ
Ε	ϘΔ	ΛΕ	Κ	ΝΗ	ΡΚΒ	Μ	Θ	ΝΑ	ΡΝΒ	ΝΘ	Ϛ	Λ
Ϛ	ϘΕ	Λ	Κ	ΛΓ	ΡΚΓ	ΛΗ	Θ	ΛΕ	ΡΝΔ	Β	Ϛ	ΛΔ
Ζ	ϘϚ	ΚΕ	Κ	Θ	ΡΚΔ	ΛϚ	Θ	ΚΑ	ΡΝΕ	Ϛ	Ϛ	ΛΘ
Η	ϘΖ	Κ	ΙΘ	ΜΔ	ΡΚΕ	ΛΔ	Θ	Ϛ	ΡΝϚ	Ι	Ϛ	ΜΔ
Θ	ϘΗ	ΙΕ	ΙΘ	ΙΘ	ΡΚϚ	ΛΒ	Η	ΝΑ	ΡΝΖ	ΙΔ	Ϛ	Ν
Ι	ϘΘ	Ι	ΙΗ	ΝΔ	ΡΚΖ	Λ	Η	ΛΖ	ΡΝΗ	ΙΗ	Ϛ	ΝΕ
ΙΑ	Ρ	Ε	ΙΗ	ΚΘ	ΡΚΗ	ΚΘ	Η	ΚΓ	ΡΝΘ	ΚΒ	Ζ	Α
ΙΒ	ΡΑ	ō	ΙΗ	Δ	ΡΚΘ	ΚΗ	Η	Η	ΡΞ	ΚϚ	Ζ	Ϛ
ΙΓ	ΡΑ	ΝΕ	ΙΖ	Μ	ΡΛ	ΚΗ	Ζ	ΝΗ	ΡΞΑ	Λ	Ζ	ΙΕ
ΙΔ	ΡΒ	Ν	ΙΖ	ΙϚ	ΡΛΑ	ΚΗ	Ζ	ΜΖ	ΡΞΒ	ΛΕ	Ζ	ΚΔ
ΙΕ	ΡΓ	ΜΕ	ΙϚ	ΝΑ	ΡΛΒ	ΚΗ	Ζ	ΛΖ	ΡΞΓ	Μ	Ζ	ΛΓ
ΙϚ	ΡΔ	ΜΑ	ΙϚ	ΚΖ	ΡΛΓ	ΚΗ	Ζ	ΚΖ	ΡΞΔ	ΜΕ	Ζ	ΜΒ
ΙΖ	ΡΕ	ΛΖ	ΙϚ	Β	ΡΛΔ	ΚΗ	Ζ	ΙΖ	ΡΞΕ	Ν	Ζ	ΝΑ
ΙΗ	ΡϚ	ΛΓ	ΙΕ	ΛΗ	ΡΛΕ	ΚΗ	Ζ	Ζ	ΡΞϚ	ΝΕ	Η	ō
ΙΘ	ΡΖ	ΚΘ	ΙΕ	ΙϚ	ΡΛϚ	ΚΗ	Ζ	Α	ΡΞΗ	Ο	Η	ΙΑ
Κ	ΡΗ	ΚΕ	ΙΔ	ΝΔ	ΡΛΖ	ΚΗ	Ϛ	ΝΕ	ΡΞΘ	Ε	Η	ΚΒ
ΚΑ	ΡΘ	ΚΑ	ΙΔ	ΛΑ	ΡΛΗ	ΚΘ	Ϛ	Ν	ΡΟ	Ι	Η	ΛΓ
ΚΒ	ΡΙ	ΙΖ	ΙΔ	Θ	ΡΛΘ	Λ	Ϛ	ΜΔ	ΡΟΑ	ΙΕ	Η	ΜΔ
ΚΓ	ΡΙΑ	ΙΓ	ΙΓ	ΜϚ	ΡΜ	ΛΑ	Ϛ	ΛΘ	ΡΟΒ	Κ	Η	ΝϚ
ΚΔ	ΡΙΒ	Θ	ΙΓ	ΚΔ	ΡΜΑ	ΛΒ	Ϛ	ΛΔ	ΡΟΓ	ΚΕ	Θ	Ζ
ΚΕ	ΡΙΓ	Ε	ΙΓ	Β	ΡΜΒ	ΛΔ	Ϛ	Λ	ΡΟΔ	Λ	Θ	Κ
ΚϚ	ΡΙΔ	Β	ΙΒ	ΜΑ	ΡΜΓ	ΛϚ	Ϛ	ΚϚ	ΡΟΕ	ΛϚ	Θ	ΛΒ
ΚΖ	ΡΙΔ	ΝΘ	ΙΒ	ΙΘ	ΡΜΔ	ΛΗ	Ϛ	ΚΓ	ΡΟϚ	ΜΒ	Θ	ΜΕ
ΚΗ	ΡΙΕ	ΝϚ	ΙΑ	ΝΖ	ΡΜΕ	Μ	Ϛ	ΙΘ	ΡΟΖ	ΜΗ	Θ	ΝΖ
ΚΘ	ΡΙϚ	ΝΓ	ΙΑ	ΛΕ	ΡΜϚ	ΜΒ	Ϛ	ΙϚ	ΡΟΗ	ΝΔ	Ι	Ι
Λ	ΡΙΖ	Ν	ΙΑ	ΙΓ	ΡΜΖ	ΜΔ	Ϛ	ΙΒ	ΡΠ	ō	Ι	ΚΓ

FIGURE 59
Table with figures of Aries, Taurus, and Gemini. The *Handy Tables* of Ptolemy. Vatican City, Biblioteca Apostolica Vaticana, Vaticanus graecus 1291, fol. 22v. © 2017 Biblioteca Apostolica Vaticana. but to a change in topic, indicating that the manuscript's decoration was overseen by a person who understood its contents.[41]

ΚΛΙΜΑ Α̅ ΑΝΑΦΟΡΑ ΤΟΥ ΔΙΑ ΜΕΡΟΗΣ ⲫ ΙΓ̅ ΕΙ ΙϚ̅ ΚΖ̅

Μ̊	ΑΝΑΦΟΡΑΙ		ΩΡΩΝ ΧΡΟΝΩΝ		ΑΝΑΦΟΡΑΙ		ΩΡΩΝ ΧΡΟΝΩΝ		ΑΝΑΦΟΡΑΙ		ΩΡΩΝ ΧΡΟΝΩΝ	
Α	Ο̄	ΜΖ	ΙΕ	Α	ΚΕ	ΙΑ	ΙΕ	ΛϚ	ΝΒ	ΚΓ	ΙϚ	Δ
Β	Α	ΛΔ	ΙΕ	Β	ΚϚ	Β	ΙΕ	ΛΖ	ΝΓ	ΚΒ	ΙϚ	Ε
Γ	Β	ΚΒ	ΙΕ	Δ	ΚϚ	ΝΓ	ΙΕ	ΛΗ	ΝΔ	ΚΑ	ΙϚ	Ε
Δ	Γ	Ι	ΙΕ	Ε	ΚΖ	ΜΔ	ΙΕ	ΛΘ	ΝΕ	Κ	ΙϚ	Ϛ
Ε	Γ	ΝΗ	ΙΕ	Ϛ	ΚΗ	ΛϚ	ΙΕ	Μ	ΝϚ	Κ	ΙϚ	Ϛ
Ϛ	Δ	ΜϚ	ΙΕ	Ζ	ΚΘ	ΚΗ	ΙΕ	ΜΑ	ΝΖ	Κ	ΙϚ	Ζ
Ζ	Ε	ΛΔ	ΙΕ	Η	Λ	Κ	ΙΕ	ΜΒ	ΝΗ	Κ	ΙϚ	Η
Η	Ϛ	ΚΒ	ΙΕ	Ι	ΛΑ	ΙΒ	ΙΕ	ΜΔ	ΝΘ	Κ	ΙϚ	Η
Θ	Ζ	Ι	ΙΕ	ΙΑ	ΛΒ	Δ	ΙΕ	ΜΕ	Ξ	Κ	ΙϚ	Θ
Ι	Ζ	ΝΗ	ΙΕ	ΙΒ	ΛΒ	ΝϚ	ΙΕ	ΜϚ	ΞΑ	Κ	ΙϚ	Ι
ΙΑ	Η	ΜϚ	ΙΕ	ΙΓ	ΛΓ	Ν	ΙΕ	ΜΖ	ΞΒ	ΚΒ	ΙϚ	Ι
ΙΒ	Θ	ΛΔ	ΙΕ	ΙΔ	ΛΔ	ΜΑ	ΙΕ	ΜΗ	ΞΓ	ΚΔ	ΙϚ	Ι
ΙΓ	Ι	ΚΒ	ΙΕ	ΙΕ	ΛΕ	ΛΗ	ΙΕ	ΜΘ	ΞΔ	ΚϚ	ΙϚ	ΙΑ
ΙΔ	ΙΑ	Ι	ΙΕ	ΙΖ	ΛϚ	ΛΒ	ΙΕ	Ν	ΞΕ	ΚΗ	ΙϚ	ΙΑ
ΙΕ	ΙΑ	ΝΗ	ΙΕ	ΙΗ	ΛΖ	ΚϚ	ΙΕ	ΝΑ	ΞϚ	Λ	ΙϚ	ΙΒ
ΙϚ	ΙΒ	ΜΖ	ΙΕ	ΙΘ	ΛΗ	Κ	ΙΕ	ΝΑ	ΞΖ	ΛΒ	ΙϚ	ΙΒ
ΙΖ	ΙΓ	ΛϚ	ΙΕ	Κ	ΛΘ	ΙΔ	ΙΕ	ΝΒ	ΞΗ	ΛΔ	ΙϚ	ΙΒ
ΙΗ	ΙΔ	ΚΕ	ΙΕ	ΚΑ	Μ	Η	ΙΕ	ΝΓ	ΞΘ	ΛϚ	ΙϚ	ΙΓ
ΙΘ	ΙΕ	ΙΔ	ΙΕ	ΚΒ	ΜΑ	Β	ΙΕ	ΝΔ	Ο	ΛΘ	ΙϚ	ΙΓ
Κ	ΙϚ	Γ	ΙΕ	ΚΔ	ΜΑ	ΝΖ	ΙΕ	ΝΕ	ΟΑ	ΜΓ	ΙϚ	ΙΓ
ΚΑ	ΙϚ	ΝΒ	ΙΕ	ΚΕ	ΜΒ	ΝΓ	ΙΕ	ΝϚ	ΟΒ	ΜΖ	ΙϚ	ΙΔ
ΚΒ	ΙΖ	ΜΑ	ΙΕ	ΚϚ	ΜΓ	ΜΘ	ΙΕ	ΝΖ	ΟΓ	ΝΑ	ΙϚ	ΙΔ
ΚΓ	ΙΗ	Λ	ΙΕ	ΚΖ	ΜΔ	ΜΕ	ΙΕ	ΝΗ	ΟΔ	ΝΕ	ΙϚ	ΙΔ
ΚΔ	ΙΘ	Κ	ΙΕ	ΚΗ	ΜΕ	ΜΒ	ΙΕ	ΝΘ	ΟϚ	Ο̄	ΙϚ	ΙΔ
ΚΕ	Κ	Ι	ΙΕ	ΚΘ	ΜϚ	ΛΘ	ΙΕ	ΝΘ	ΟΖ	Ε	ΙϚ	ΙΔ
ΚϚ	ΚΑ	Ο̄	ΙΕ	Λ	ΜΖ	ΛϚ	ΙϚ	Ο̄	ΟΗ	Ι	ΙϚ	ΙΔ
ΚΖ	ΚΑ	Ν	ΙΕ	ΛΒ	ΜΗ	ΛΓ	ΙϚ	Α	ΟΘ	ΙΕ	ΙϚ	ΙΕ
ΚΗ	ΚΒ	Μ	ΙΕ	ΛΓ	ΜΘ	Λ	ΙϚ	Β	Π	Κ	ΙϚ	ΙΕ
ΚΘ	ΚΓ	Λ	ΙΕ	ΛΔ	Ν	ΚΖ	ΙϚ	Γ	ΠΑ	ΚΕ	ΙϚ	ΙΕ
Λ	ΚΔ	Κ	ΙΕ	ΛΕ	ΝΑ	ΚΔ	ΙϚ	Γ	ΠΒ	Λ	ΙϚ	ΙΕ

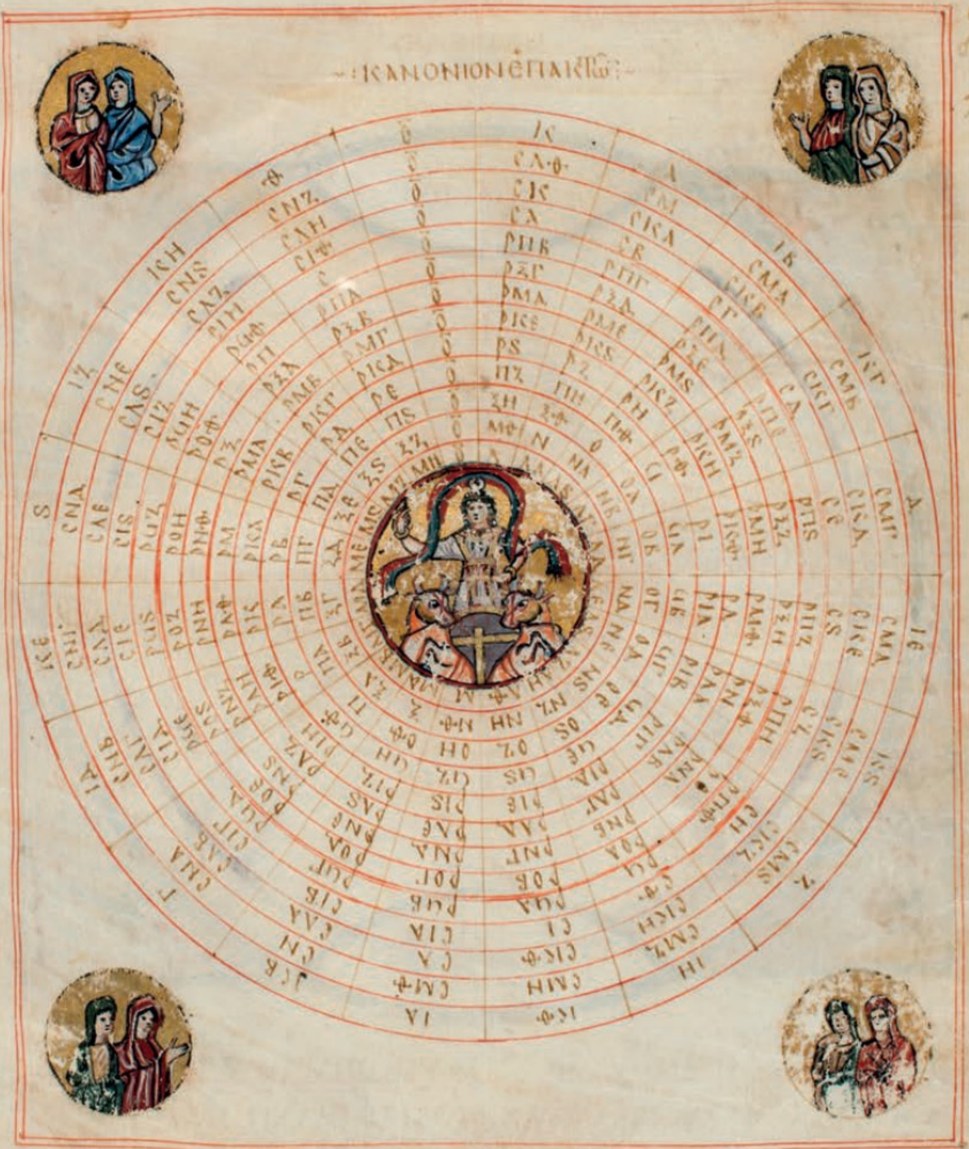
FIGURE 60
Table with figures of Aries, Taurus, and Gemini. The *Handy Tables* of Ptolemy. Vatican City, Biblioteca Apostolica Vaticana, Vaticanus graecus 1291, fol. 24r. © 2017 Biblioteca Apostolica Vaticana.

There are five full-page painted diagrams in the Vatican Ptolemy, of which two are unique to the manuscript, and three find non-figural counterparts in the other majuscule manuscripts of the *Handy Tables*.[42] Among these shared diagrams, the epact table is especially significant (fig. 61). The "epact" expresses the age of the moon in days on a fixed date in the solar calendar.[43] Possession of this figure facilitates reconciliation of the solar calendar with such lunar calendars as the Babylonian, used in some astrological computations, and the Hebrew, which Christians use to calculate the date of Easter.

ϗ ΤΑΑΠΟΔΙΟΚΛΗΤΙΑΝΟΥΕΤΗΚΑΤΕΧΩΝΕΝΤΗΧΕΙΡΙϹΟΥ· ΑΦΑΙΡΕϹΟΝΕ
·ΔΑΥΤΩΝΕΝ·ΤΑΛΟΙΠΑΜΕΡΙϹΟΝΠΑΡΑΤΟΝΔΕΚΑΕΝΝΕΑ·ΚΑΙΤΑΛΟΙΠΑΠΟΛΥ
ΠΛΑϹΙΑϹΟΝΕΠΙΤΟΝΙΘ·ΚΑΙΡΙΨΟΝΤΡΙΑΚΟΝΤΑΔΑϹ·ΚΑΙΤΑΚΑΤΑΛΕΙΠΟΜΕΝΑΛΕ
ΓΕΕΠΑΚΤΑϹΕΙΝΑΙ·ΥΠΟΔΕΙΓΜΑΤΟϹΧΑΡΙΝΕϹΤΩΕΤΗΑΦΩΝΑ ΑΦ ΕΛΗ·ΠΑΡΑΤΟΝ
ΙΘ ΔΕΚΑΔΕΚΑΕΝΝΕΑΔΙϹΔΕΚΑΕΝΝΕΑ ΛΠ Ι ΤΑΥΤΑΕΠΙΤΟΝΕΝΔΕΚΑΓΙΝΕΤΑΙ·ΔΕΚΑ
ΔΕΚΑΕΝΝΕΑ ΡΙ ΡΙΠΤΟΜΕΝΤΡΙϹΤΡΙΑΚΟΝΤΑ ΛΟΙΠΑ ΚΑΤΑΤΑΥΤΑϹΛΕΓΟΜΕΝΕΠΑΚΤΑϹ:

4·7

·:ΚΑΝΟΝΙΟΝ ΕΠΑΚΤΩΝ:·



ΤΑ ΗΜΙΚΥΚΛΙΑ. ΤΑϹ ΕΠΑΚΤΑϹ ΕΧΟΥϹΙΝ·
ΟΙ ΠΑΡΑΛΛΗΛΟΙ. ΤΑ ΑΠΟ ΔΙΟΚΛΗΤΙΑΝΟΥ

FIGURE 61
Epact table. The *Handy Tables* of Ptolemy. Vatican City, Biblioteca Apostolica Vaticana, Vaticanus graecus 1291, fol. 47r. © 2017 Biblioteca Apostolica Vaticana.

The diagram in the Vatican Ptolemy consists of thirteen concentric rings around a central medallion, in which the moon appears in her crescent crown, her garment billowing about her head, driving a chariot drawn by two bulls. She raises her right arm and gestures with an extended hand, while in her left hand she holds the reins.[44] The rings are divided into twenty chords, of which one, a few degrees left of zero, is filled with null values. The table begins with the next chord to the right and is read clockwise. The outermost ring contains a standard nineteen-year cycle of epacts, while each of the remaining twelve rings contains a cycle of nineteen years reckoned according to the Diocletianic era: from 30 to 257, that is, from a.d. 314 to 541.[45] A user would seek the year of interest and discover the corresponding epact by following the chord to the outermost ring.

To judge from the years included, the epact table was copied from a model composed in the early fourth century, and had no practical use for readers of the Vatican Ptolemy, for whom it was at least 250 years out of date.[46] Furthermore, the years are given in an order incompatible with the systems used to reckon Easter in early medieval Constantinople.[47] Finally, the text carefully inscribed in gold majuscule letters above the table, which provides instructions for deriving the epact from a year in the Diocletianic era, includes multiple errors.[48] Like the diagram, it too must have been copied from an earlier exemplar.[49]

By contrast, the solar diagram finds no parallel in the other majuscule copies of the *Handy Tables* and is likely an original composition contemporary with the production of the manuscript (see fig. 57).[50] Whereas the other full-page diagrams appear close together in the middle of the volume, the solar diagram appears at its front, in the first of the original quires. It is further distinguished by its function. The bulk of the manuscript provides information that is meant to be valid for all times. Even the epact table, constrained by its size to a finite range of years, claims to offer generally valid instructions in the text. The solar diagram, by contrast, provides information that was only valid for certain years, a period that converges with the date of the manuscript as derived from the ruler table.

Both the diagram’s background, gold in the rings and blue in the central medallion, and the subtle modeling of the figures recall the lunettes executed by the first painter (fig. 62, and see fig. 59), but the images of the constellations exhibit different attributes.[51] For example, Aquarius appears on the solar diagram in a red Phrygian cap with a blue nimbus. His red cape, worn over his left shoulder, falls down straight behind him, and he is shod in blue boots. On the table of the right ascensions, by contrast, Aquarius is depicted without the nimbus, in a blue cap, and barefoot: his green cape billows out behind him (see fig. 62). Or compare the figures of Gemini: on the solar diagram the twins stand completely nude except for bands around their ankles, the near arm of each about the shoulder of the other, the far arm crooked at ninety degrees and gripping a staff that terminates in a small circle. On the table of the right ascensions, they wear capes of distinct colors, more space separates the two figures, and instead of staffs they hold spears (see fig. 59). Perhaps the solar diagram was executed by the same artist, who was here given freer rein to invent.[52]

ΟΡΘΗΣ ΣΦΑΙΡΑΣ ΣΥΜΜΕΣΟΥΡΑΝΗΜΑΤΑ ΠΑΝΤΑΧΟΥ

22

ΜΟΙ	ΑΝΑΦΟΡΑΙ		ΩΡΩΝ		ΑΝΑΦΟΡΑΙ		ΩΡΩΝ		ΑΝΑΦΟΡΑΙ		ΩΡΩΝ	
Α	Α	Ϛ	ΙΗ	Μ	ΛΓ	ΙΗ	ΛΑ	ΙϚ	ΞΓ	Ζ	ΛΒ	ΙΓ
Β	Β	ΙΒ	ΙΘ	ΙΑ	ΛΔ	Κ	ΛΑ	ΚΗ	ΞΔ	Δ	ΛΒ	Ο̅
Γ	Γ	ΙΗ	ΙΘ	ΜΒ	ΛΕ	ΚΒ	ΛΑ	Μ	ΞΕ	Α	ΛΑ	ΜΖ
Δ	Δ	ΚΔ	Κ	ΙΓ	ΛϚ	ΚΔ	ΛΑ	ΝΒ	ΞΕ	ΝΗ	ΛΑ	ΛΓ
Ε	Ε	Λ	Κ	ΜΔ	ΛΖ	ΚϚ	ΛΒ	Δ	ΞϚ	ΝΕ	ΛΑ	Κ
Ϛ	Ϛ	ΛΕ	ΚΑ	ΙΕ	ΛΗ	ΚΗ	ΛΒ	ΙϚ	ΞΖ	ΝΑ	ΛΑ	Ϛ
Ζ	Ζ	Μ	ΚΑ	ΜΕ	ΛΘ	ΚΘ	ΛΒ	ΚΔ	ΞΗ	ΜΖ	Λ	Ν
Η	Η	ΜΕ	ΚΒ	ΙΔ	Μ	Λ	ΛΒ	ΛΒ	ΞΘ	ΜΓ	Λ	ΛΔ
Θ	Θ	Ν	ΚΒ	ΜΔ	ΜΑ	ΛΑ	ΛΒ	ΜΑ	Ο	ΛΘ	Λ	ΙΗ
Ι	Ι	ΝΕ	ΚΓ	ΙΓ	ΜΒ	ΛΒ	ΛΒ	ΜΘ	ΟΑ	ΛΕ	Λ	Β
ΙΑ	ΙΒ	Ο̅	ΚΓ	Μ	ΜΓ	ΛΒ	ΛΒ	ΝΗ	ΟΒ	ΛΑ	ΚΘ	ΜϚ
ΙΒ	ΙΓ	Ε	ΚΔ	ΙΑ	ΜΔ	ΛΒ	ΛΓ	Ϛ	ΟΓ	ΚΖ	ΚΘ	Λ
ΙΓ	ΙΔ	Ι	ΚΔ	ΛΗ	ΜΕ	ΛΒ	ΛΓ	Θ	ΟΔ	ΚΓ	ΚΘ	ΙΔ
ΙΔ	ΙΕ	ΙΕ	ΚΕ	Δ	ΜϚ	ΛΒ	ΛΓ	ΙΒ	ΟΕ	ΙΘ	ΚΗ	ΝΑ
ΙΕ	ΙϚ	Κ	ΚΕ	ΛΑ	ΜΖ	ΛΒ	ΛΓ	ΙΕ	ΟϚ	ΙΕ	ΚΗ	ΛΒ
ΙϚ	ΙΖ	ΚΕ	ΚΕ	ΝΖ	ΜΗ	ΛΒ	ΛΓ	ΙΗ	ΟΖ	Ι	ΚΗ	ΙΒ
ΙΖ	ΙΗ	Λ	ΚϚ	ΚΔ	ΜΘ	ΛΒ	ΛΓ	Κ	ΟΗ	Ε	ΚΖ	ΝΓ
ΙΗ	ΙΘ	ΛΔ	ΚϚ	Ν	Ν	ΛΒ	ΛΓ	ΚΓ	ΟΘ	Ο̅	ΚΖ	ΛΓ
ΙΘ	Κ	ΛΗ	ΚΖ	ΙΓ	ΝΑ	ΛΑ	ΛΓ	Κ	ΟΘ	ΝΕ	ΚΖ	ΙΑ
Κ	ΚΑ	ΜΒ	ΚΖ	ΛΕ	ΝΒ	Λ	ΛΓ	ΙΖ	Π	Ν	ΚϚ	ΜΘ
ΚΑ	ΚΒ	ΜϚ	ΚΖ	ΝΗ	ΝΓ	ΚΗ	ΛΓ	ΙΔ	ΠΑ	ΜΕ	ΚϚ	ΚΖ
ΚΒ	ΚΓ	Ν	ΚΗ	Κ	ΝΔ	ΚϚ	ΛΓ	ΙΑ	ΠΒ	Μ	ΚϚ	Ε
ΚΓ	ΚΔ	ΝΔ	ΚΗ	ΜΒ	ΝΕ	ΚΔ	ΛΓ	Η	ΠΓ	ΛΕ	ΚΕ	ΜΓ
ΚΔ	ΚΕ	ΝΗ	ΚΘ	Δ	ΝϚ	ΚΒ	ΛΓ	Ε	ΠΔ	Λ	ΚΕ	ΚΑ
ΚΕ	ΚΖ	Α	ΚΘ	ΚΔ	ΝΖ	Κ	ΛΒ	ΝΘ	ΠΕ	ΚΕ	ΚΔ	ΝΗ
ΚϚ	ΚΗ	Δ	ΚΘ	ΜΔ	ΝΗ	ΙΗ	ΛΒ	ΝΒ	ΠϚ	Κ	ΚΔ	ΛΔ
ΚΖ	ΚΘ	Ζ	Λ	Δ	ΝΘ	ΙϚ	ΛΒ	ΜΔ	ΠΖ	ΙΕ	ΚΔ	ΙΑ
ΚΗ	Λ	Ι	Λ	ΚΔ	Ξ	ΙΔ	ΛΒ	ΛΘ	ΠΗ	Ι	ΚΓ	ΜΖ
ΚΘ	ΛΑ	ΙΓ	Λ	ΜΔ	ΞΑ	ΙΒ	ΛΒ	ΛΓ	ΠΘ	Ε	ΚΓ	ΚΔ
Λ	ΛΒ	ΙϚ	ΛΑ	Δ	ΞΒ	Ι	ΛΒ	ΚϚ	Ϙ	Ο̅	ΚΓ	Ο̅

FIGURE 62
Table with figures of Capricorn, Aquarius, and Pisces. The *Handy Tables* of Ptolemy. Vatican City, Biblioteca Apostolica Vaticana, Vaticanus graecus 1291, fol. 22r. © 2017 Biblioteca Apostolica Vaticana.

Indeed, aspects of the solar diagram betray an effort to introduce variety into an image that could easily become rigid and schematic. All of the figures of the inner rings demand a uniform posture, since all are presented frontally and at bust length, radiating outward from the central medallion. As no motifs distinguish one “day” from the next, a variety of gesture has been introduced among the figures of the innermost ring instead. Some raise both hands, while others gesture only with the right, placing the left variously on the stomach or behind the back. Similar gestural diversity characterizes the ring of the months, where distinctions of dress and attribute allow for further variety.

A different set of decisions was involved in the arrangement of the constellations, which are shown at full length, their bodies extending along the ring. In most cases, bipeds stand as upright as possible, while quadrupeds face clockwise. The two exceptions seem considered. Taurus, just to the left of the top, springs away counterclockwise, creating a dynamic contrast to his neighbor, Aries, who runs in the opposite direction. Aquarius, at roughly three o’clock, could easily stand upright, but is instead set on his head. The inversion allows a visual joke: the water that pours from his amphora falls into the aquatic realm of Pisces below.

The composition is anchored by the medallion at center, where Helios, whose yearly course determines the diagram’s content, stands against a blue sky in his chariot (fig. 63). His four white horses wear red collars speckled with white and stand in strict symmetry, the inner pair facing in and the outer facing out. The yoke of the carriage is rendered as an upright cross. The charioteer, however, is neither frontal nor symmetrical. He holds a globe in his left hand, which is covered by a reddish-purple cloak, and his right arm is stretched out, with palm open in the direction of his gaze. His torso pulls back from the extended arm, leaving a large blue space to his right. The rays of his solar crown break through the medallion and into the space of night above. This is a far more dynamic image than the standard, frontal charioteer of contemporary silks and reliefs.[53] In the central medallion, as in the diagram as a whole, compositional symmetry is relieved by variety of detail. The result is an image of a cosmos ruled by rational and predictable laws but tempered by grace. The variety of gesture among the months and hours, the benevolent posture of Helios, and the occasional transgression of the diagram’s boundaries by a splash of water or a crown’s spoke provide moments of freedom within order.

The effect is appropriate to the diagram’s content, in which the eternal structure of the cosmos is revealed by its momentary manifestation. The same balance between the universal and the particular animates the central figure. According to the logic of the diagram he represents the sun, winding his annual course across the ecliptic, but he also draws on a rich vein of triumphal, imperial iconography.[54] The image finds close comparanda in sixth-and seventh-century gold medallions and coins, especially a solidus of Maurice (582–602) (fig. 64) and a medallion in the Louvre (fig. 65).[55] On both, the emperor distributes largess, carrying a globe in his left hand and extending his right with open palm, from a chariot drawn by horses, of which the innermost are turned inward and the outermost outward. The most striking difference from the solar diagram is the object atop the globe: on the coins, a statue of victory; in the manuscript, a tassel, familiar from late antique representations of Helios.[56] Unlike its predecessors, however, the tassel of the Vatican Ptolemy makes a curious detour before trailing off in the breeze, winding twice about its own stem to produce a cross with two horizontal arms. By the eighth century, victory had disappeared from the globes displayed by Byzantine emperors on their coins to be replaced by just such a cross (fig. 66).

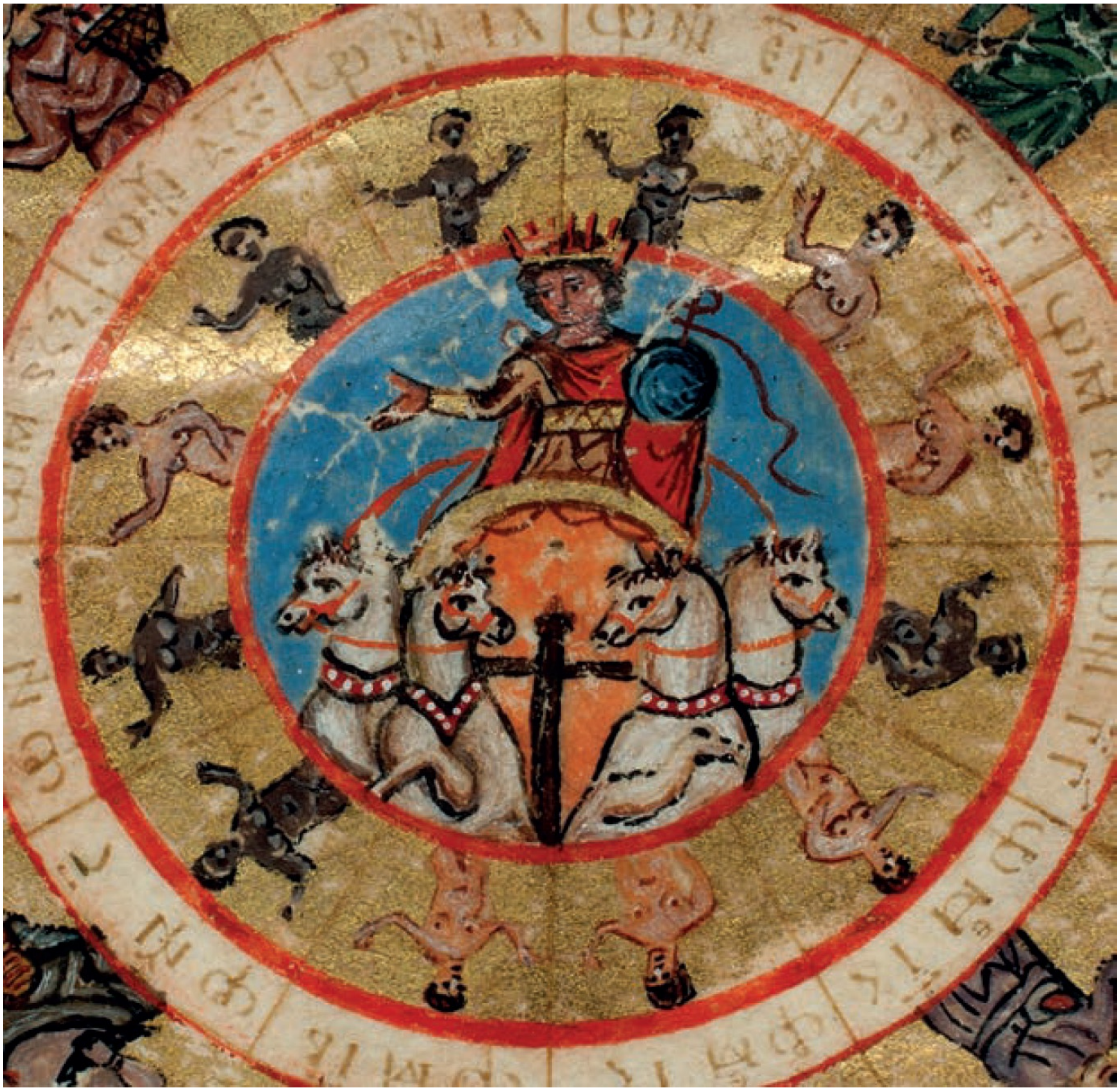


FIGURE 63
The solar chariot. The *Handy Tables* of Ptolemy (detail of fig. 57). Vatican City, Biblioteca Apostolica Vaticana, Vaticanus graecus 1291, fol. 9r. © 2017 Biblioteca Apostolica Vaticana.

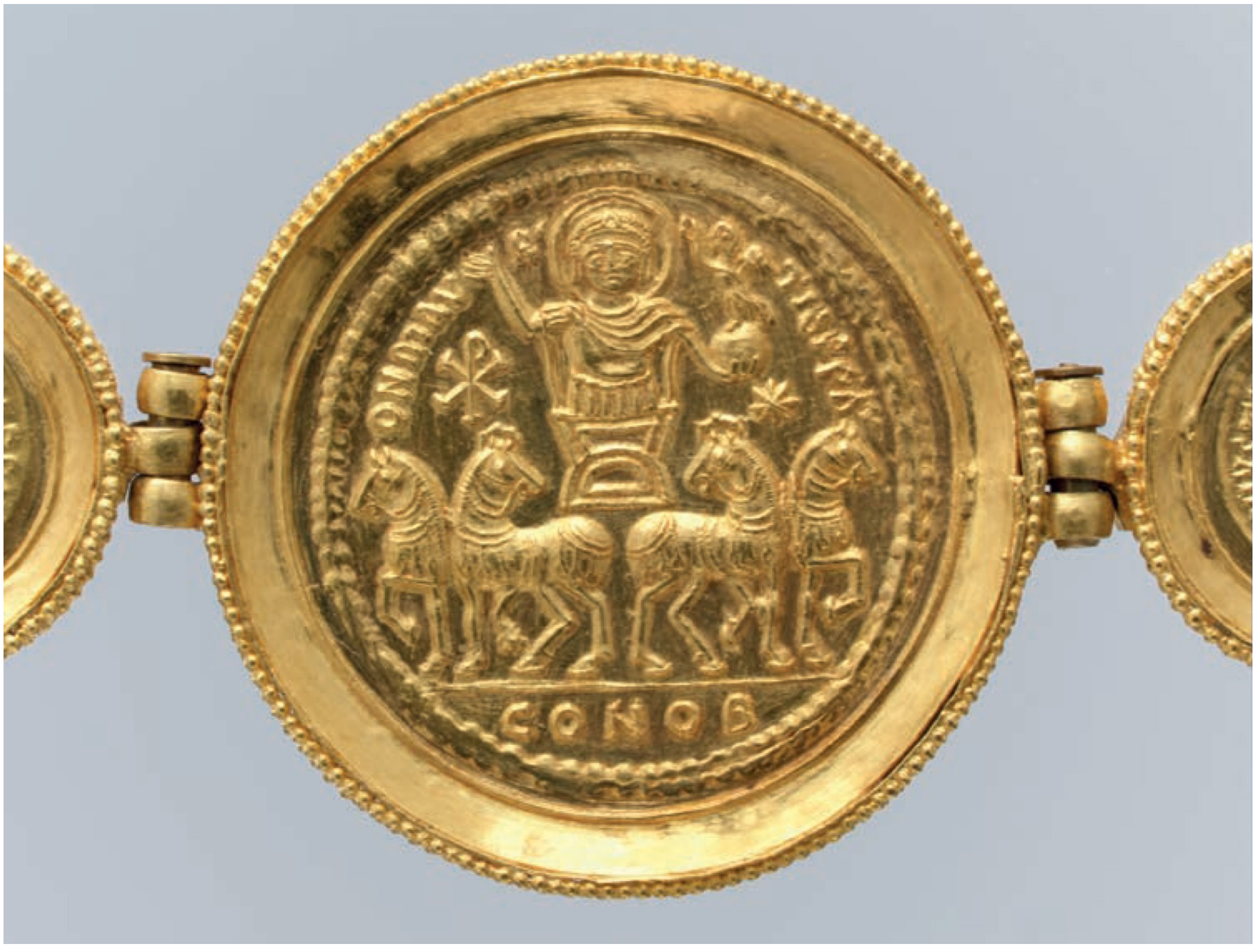


FIGURE 64
Gold solidus of Maurice (582–602), set in the so-called Kyrenia girdle. New York, The Metropolitan Museum of Art, New York, Gift of J. Pierpont Morgan, 1917 (17.190.147).

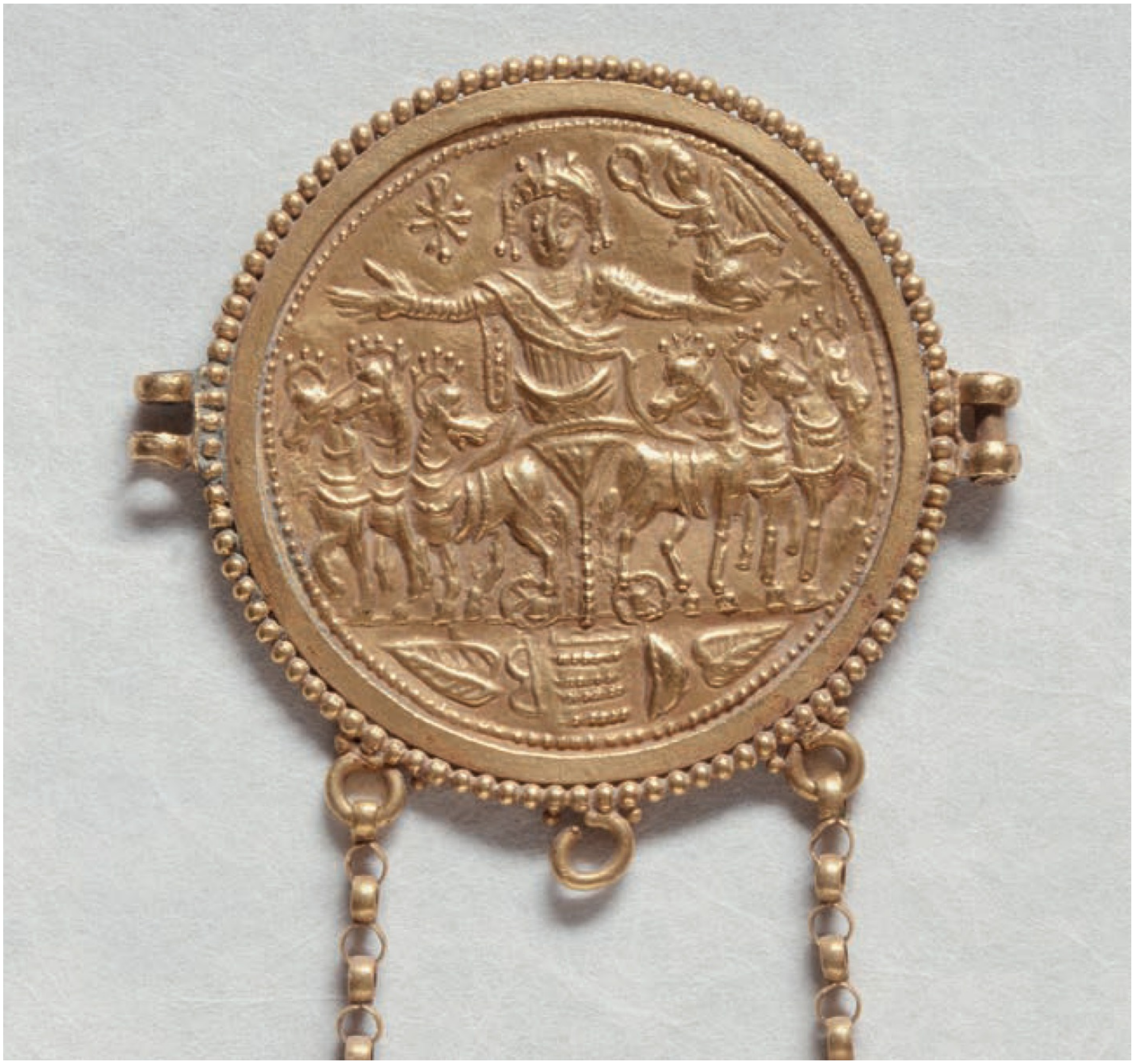


FIGURE 65
Gold medallion with triumphant emperor. 6th century. Paris, Musée du Louvre.

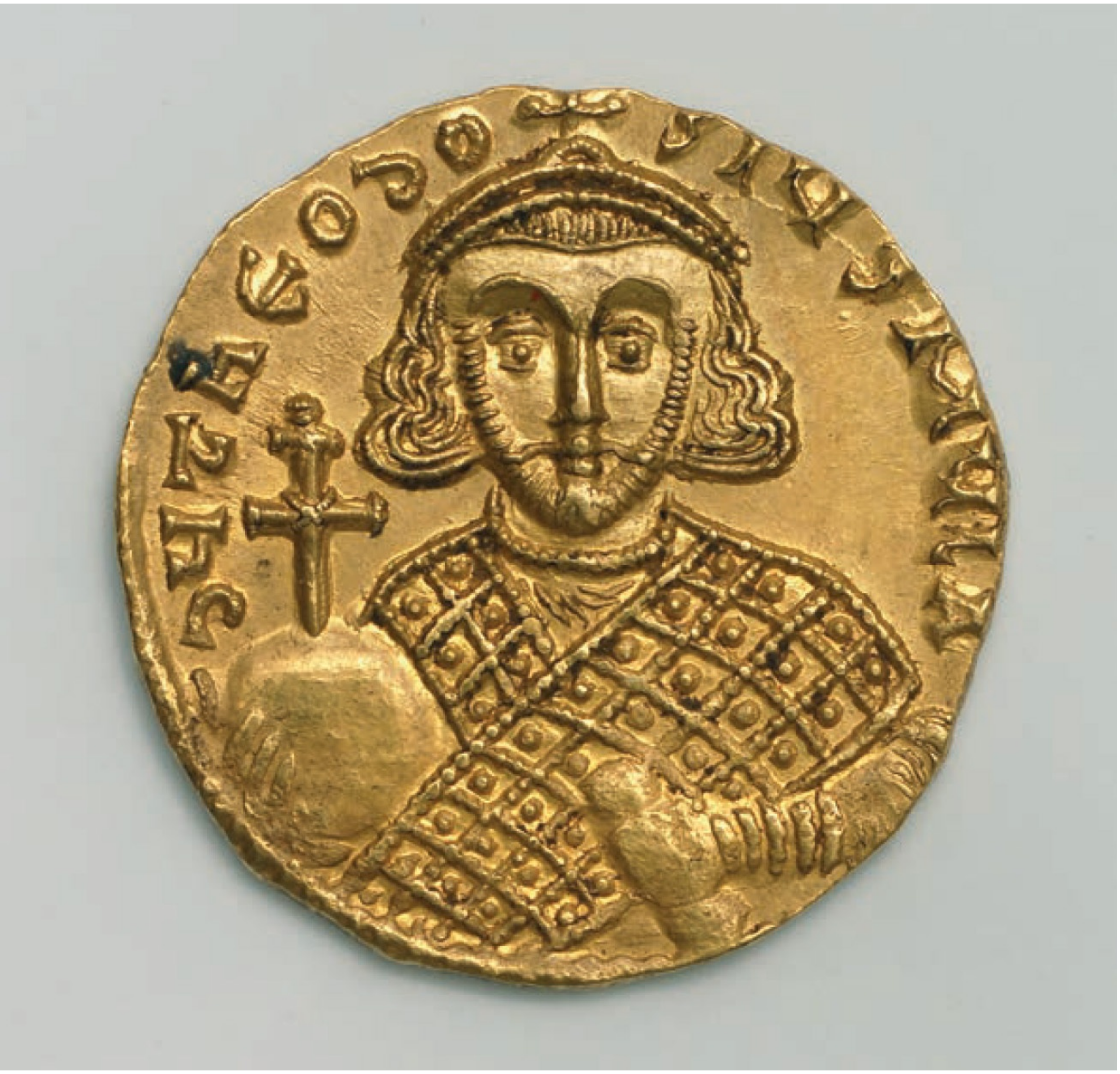


FIGURE 66
Gold solidus of Theodosius III (715–717). Washington, D.C., Dumbarton Oaks (BZC.1948.17.2430).

The four white horses who draw the chariot in the miniature also evoke imperial privilege. White horses, in earliest custom reserved for the gods, had entered imperial ceremony by late antiquity.[57] A passage in Theophanes describes the Easter procession of 799, in which the empress Eirene (797–802) “processed from the Church of the Holy Apostles, riding in a golden chariot drawn by four white horses, and distributed largess in abundance.”[58] The *Book of Ceremonies* details a Paschal procession in which the emperor rides a white horse whose golden harness is studded with pearls, a detail that may explain the white specks on the horses’ collars in the Vatican Ptolemy.[59]

Not every charioteer is solar, nor is every sun imperial.[60] But the central medallion of the solar diagram stands deep within the overlapping iconographic fields of the sun, the charioteer, and the emperor. It does not depict a reigning emperor, but it does evoke the imperial office in its cosmic significance. Thus the tension between timeless law and its temporal manifestation, embodied within the solar diagram as a whole, is replicated in its central figure, both eternal sun and temporal *basileus.*

The Vatican Ptolemy was above all a practical handbook for experts in astronomy and astrology, and numerous marginal annotations demonstrate that it was used as such.[61] Perhaps they were made by imperial astrologers, like the unfortunate Pankratios.[62] If the solar diagram evokes the ideal of a well-ordered cosmos mirrored by a well-ruled empire, the book would then become its guarantee, the manual that ensures imperial access to the immutable laws of heaven. In this sense, the solar diagram possesses a radically local frame of reference. It is a sort of dedication image, which speaks to little more than the purpose of the volume in which it appears. It might activate a set of political associations, but only for the narrow audience of experts who could understand the book's ability to generate knowledge of use to the state.

The solar diagram is separated from the remaining paintings of the manuscript by a number of folios, by different iconographies of the constellations, and by distinctions in function and origin. The diagrams at the core of the manuscript were faithfully copied from an exemplar, if not always with understanding. They increase the prestige of the volume, but they do not aid in its use or comprehension, nor could they, like the Aratean cycles of the Carolingian manuscripts, produce meaning independently of the manuscript's "text." The gulf between the solar diagram and the core tables also precludes the former from providing a universal frame that lends significance to the individual elements, as do the celestial maps of the Bavarian compendia. In the hermetic purposiveness of its images, and despite the proficiency of its painters, the Vatican Ptolemy resembles the monastic handbooks preserved in Basel and Munich more than the Aachen Encyclopedia or the Bavarian compendia. It is a local monument, even if its original location was an imperial court with cosmocratic pretensions. Not surprisingly, its images find no echo in later Byzantine astronomical manuscripts. The Vatican Ptolemy seems to have stayed close to home.

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In both its parochial scope and its limited circulation, the Vatican Ptolemy occupies the opposite end of the spectrum from a slightly later Byzantine manuscript, to which we now turn.[63] The Vatican Kosmas is a nearly square volume measuring 13 by 133⁄8 inches (33 × 34 cm), only slightly taller than the Vatican Ptolemy but almost twice its width. The book was originally wider still but was brought close to square when its outer margin was later trimmed.[64] Current consensus assigns the script and the style of the illuminations to ninth-century Constantinople.[65] The images of the Vatican Kosmas present a comprehensive vision of the structure of the universe across a range of scales. Furthermore, closely related images appear in other manuscripts in the decades after its production, copied either from this very manuscript, or from its kin. However, the Vatican Kosmas advances a cosmology polemically opposed to the spherical model that is assumed by the *Handy Tables*, and indeed by the dominant traditions of antiquity.

Whereas most manuscripts discussed thus far have been compendia, the Vatican Kosmas contains a single integral text: the first ten books of a treatise known as the *Christian Topography*, which was written in the sixth century by an Alexandrian merchant conventionally known as Kosmas Indikopleustes.[66] The first-person narrator claims authorship both of the prose and of the book's many images. The *Topography* thus presents a very rare case of an ancient text whose illustration is explicitly tied to authorial agency.[67] Two eleventh-century Byzantine copies of the *Topography* represent a distinct textual family that includes, among other differences, two additional books. However, the three manuscripts share a substantial series of images in common, which must form part of the author's original work.[68]

Indeed, text and images share a common goal, namely, to refute the spherical cosmology of the ancients, and to represent the universe as an oblong, barrel-vaulted chamber instead (fig. 67). Kosmas claims biblical support for this model, returning repeatedly to a small number of proof texts. The most important is Genesis 1, 1: "In the beginning God made the sky and the earth," from which Kosmas concludes that heaven and earth are two distinct entities, whereas in a spherical cosmos earth is contained within heaven. For Kosmas, heaven is a vault, the earth is a rectangular chamber, and the two are separated by the firmament. Of nearly equal importance is Isaiah 40, 22: "He who has set up heaven like a vault and stretched it out like a tent to live in": the vault is the barrel that crowns heaven, and the tent is the firmament.

The miniatures of the *Topography* represent Kosmas's model like an architect might propose a new project: in perspective views (see fig. 67), plan (fig. 68), and elevation. The "two-story" universe depicted in these images was not Kosmas's invention, but the culmination of a cosmological tradition, usually referred to as "Antiochene" after the like-named school of exegesis.[69] Kosmas himself quotes extensively from earlier authorities, including the fifth-century bishop Severianos of Gabala, who advanced a similar model. Kosmas furthermore claims to have inherited his drawings from his teacher, a certain Patrikios, who has been identified with Mar Aba, a churchman and scholar from Mesopotamian Nisibis.[70] Unique to Kosmas, however, is the attempt to systematically ground this cosmology both in personal observation and in biblical exegesis. Many of the *Topography*'s images depict biblical subjects, with particular attention to the tabernacle constructed by Moses, whose shape, for Kosmas, is intimately related, although not identical, to that of the cosmos.[71]

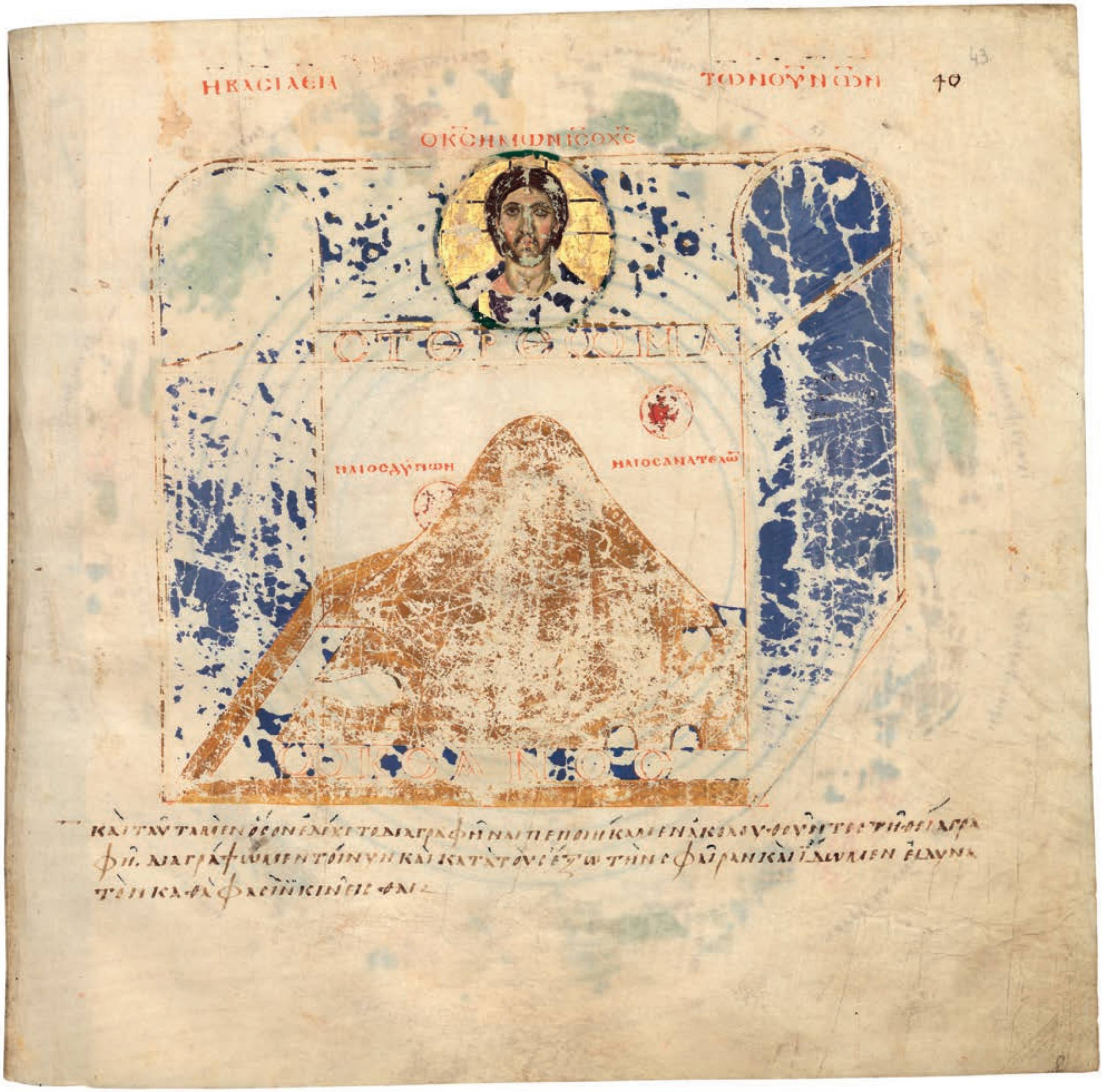


FIGURE 67
Perspective view of the “Antiochene” cosmos. The *Christian Topography* of Kosmas Indikopleustes. Probably Constantinople, 9th century. 33 × 34 cm (full folio). Vatican City, Biblioteca Apostolica Vaticana, Vaticanus graecus 699, fol. 43r. © 2017 Biblioteca Apostolica Vaticana.

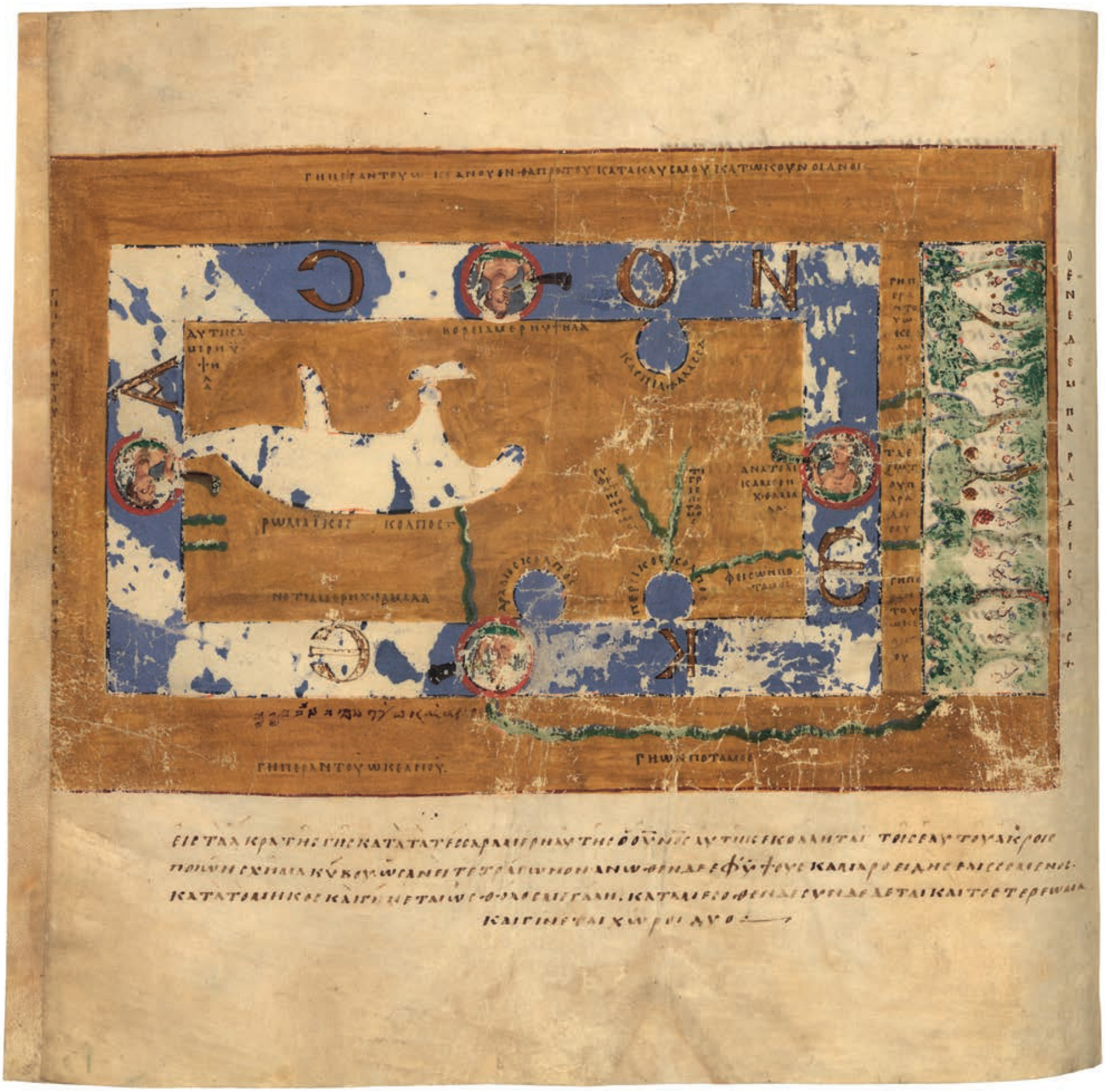


FIGURE 68
Plan of the "Antiochene" cosmos. The *Christian Topography* of Kosmas Indikopleustes. Vatican City, Biblioteca Apostolica Vaticana, Vaticanus graecus 699, fol. 40v. © 2017 Biblioteca Apostolica Vaticana.

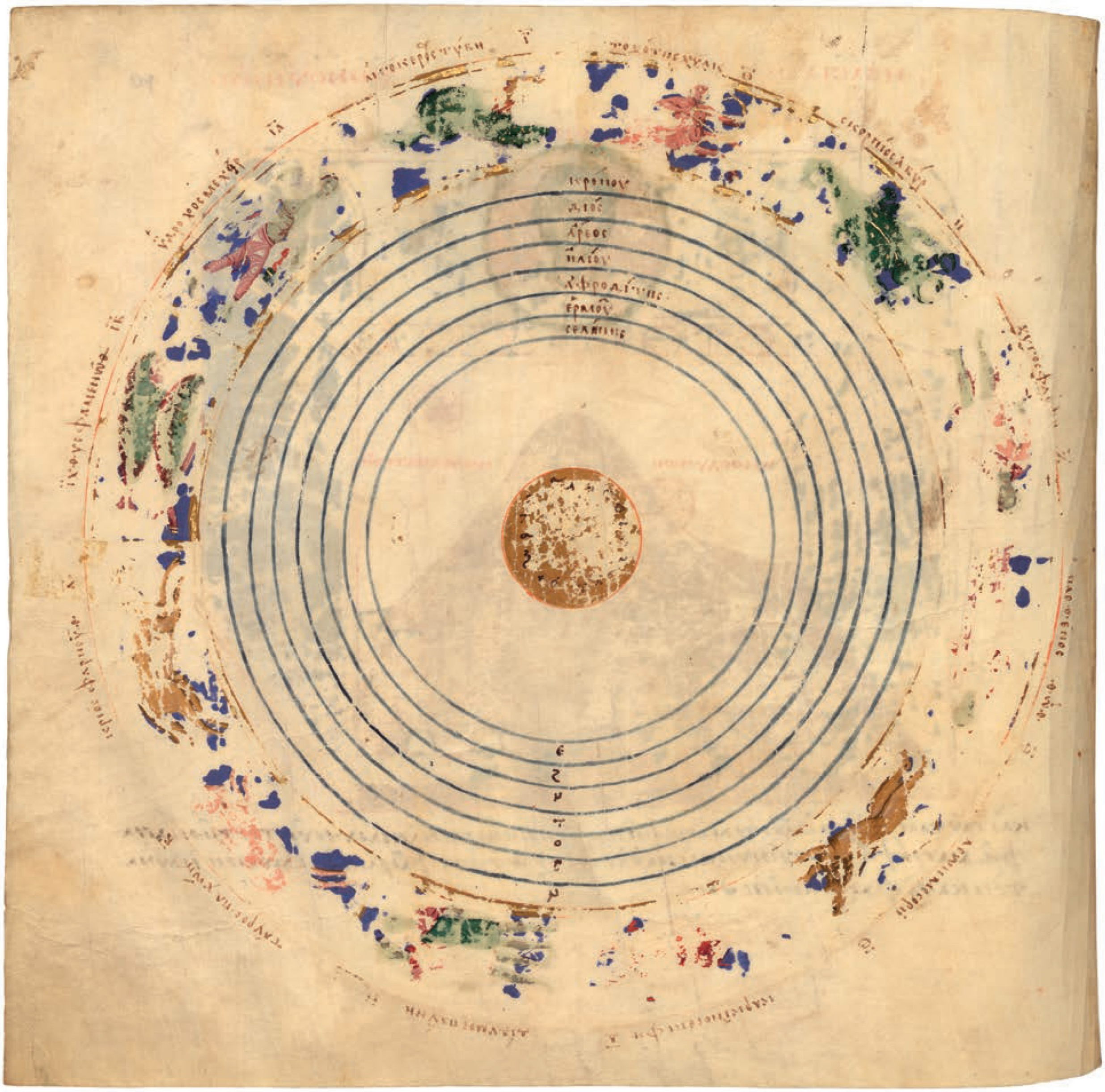


FIGURE 69
Zodiac, planets, and earth. The *Christian Topography* of Kosmas Indikopleustes. Vatican City, Biblioteca Apostolica Vaticana, Vaticanus graecus 699, fol. 43v. © 2017 Biblioteca Apostolica Vaticana.

The *Topography* furthermore contains a sustained attack on the spherical conception of the universe, which is also depicted in multiple miniatures. Some of these images are straightforward and accurate representations of the standard model, such as the diagram showing the earth surrounded by the concentric circles of the planetary orbits and the outermost sphere of the fixed stars (fig. 69). In the Vatican Kosmas, this image is situated on the verso of the most detailed representation of the vaulted cosmos (see fig. 67), thus forcing even the most casual reader to compare the two models. Other depictions of the spherical cosmos are more overtly polemical, such as the image of the antipodes. The quire containing the relevant section of the *Topography* is missing from the Vatican Kosmas, but the image is directly invoked in the text and is preserved in one of the eleventh-century copies (fig. 70).[72] For Kosmas, the idea that distant peoples might stand upside down on the other side of a spherical world was patently absurd.[73]

The images of the Vatican Kosmas present a coherent and comprehensive view of the universe. They are furthermore complete in themselves, capable of transmitting Kosmas's arguments even without the accompanying texts. The Vatican Kosmas is therefore broader in ambition and scope than the Vatican Ptolemy, and it may also have circulated more widely. One ninth-century reader of the *Christian Topography*, the Patriarch Photios (858–867 and 877–886), dismissed its author as a fabulist and described his theories as "absurdities."[74] However, both the execution of the Vatican manuscript and the reception of Kosmas's images in two additional ninth-century manuscripts demonstrate that some of Photios's contemporaries took the *Topography* seriously.

καὶ τοὺς ἀντίποδας. καὶ πῶς ἐστὶν ἡμῖν χειμὼν ὁ αὐτὸς ἐκεῖ
ἴσος καὶ ἰσημερίας φρονεῖς, περιφερείας ἀμφοτέρας ἀνώμαλα
τὴν γῆν. καὶ ἑστῶτας. ἑστάναι οἱ ἀντίποδες ἡμῶν ἂν ται
ὀρθοὶ κατ' αὐτὸν λέγομαι· ἀλλ' οὐκ ἂν δέξαιτο ὅστις ἐκκαίεται
χυτοὺς ἐροῦσιν· οὕτως οὖν πρὸς τοῖς ἡμετέροις πλα-
γίας καὶ οἱ κάτω ἔχουσι τοὺς πόδας. καὶ τὰ συμπεράσ-
ματα τῶν ἡμετέρων λόγων ἀνώμαλα καὶ ἀκατάλλη-
λα καὶ ἀσύστατα. καὶ κλόνον οὐ τὸν τυχόντα ὑπομέ-
νονται. καὶ περιφορὰν πλάζονται τῆς ἀπάτου καὶ περι-
φερομένης παρ' ὑμῖν μυθικῆς σφαίρας. διὸ φιλό-
χριστε πάτερ· τοῦτο γὰρ τοῦ λόγου τοῦ τετάρτου τέλος ποιησά-
μενος, ἄρχομαι μετὰ τὴν διαγραφὴν τῶν ἀντιπόδων,
καὶ τοῦ πέμπτου λόγου, ὡς ἐπηγγειλάμην τῇ σῇ φιλοθέῳ
ψυχῇ, τῆς σκηνῆς τὴν διαγραφὴν τῆς ἐν τῇ ἐρήμῳ ὑπὸ Μω-
ϋσέως κατασκευασθείσης ποιήσασθαι· [illegible] τοῦ πάντων
ἡμῶν σρς θυ:-

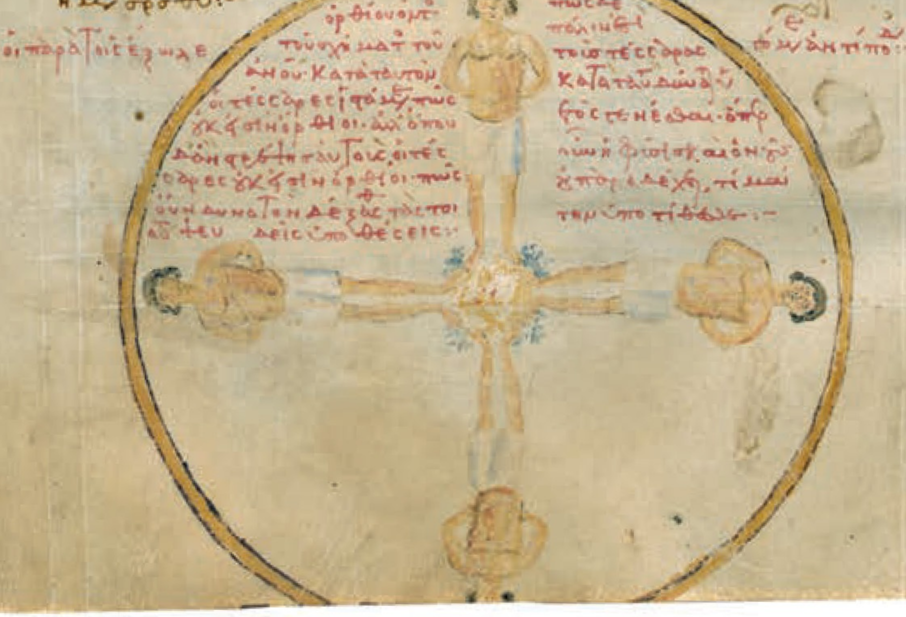


FIGURE 70
The antipodes. The *Christian Topography* of Kosmas Indikopleustes. Possibly Mount Athos, 11th century. 22.5 × 17.5 cm (full folio). Florence, Biblioteca Medicea Laurenziana, Ms. Plut. 9.28, fol. 98v.

Both additional manuscripts are "marginal psalters," psalmbooks whose illuminations interact with the text to produce highly literate and complex networks of interpretation and commentary. The miniatures of the ninth-century psalters include both biblical imagery and depictions of contemporary or recently deceased figures, directing particular venom toward the opponents of icon veneration, above all Patriarch John VII ("the Grammarian," 837–843).[75] The Khludov Psalter, today in Moscow, also borrows from an illuminated copy of the *Christian Topography*.[76] For example, one miniature depicts the ground plan of the Antiochene cosmos (fig. 71). The image accompanies Psalm 134, 7: "Bringing up clouds from the earth's end, he made lightnings into rain, he who brought out winds from his storehouses." A wavy blue line crowns the word "winds," to which the miniature responds. A rectangular, tree-covered earth is surrounded by a blue, rectangular frame of water, while four figures of the winds, clad in red, blow their horns from the four corners. The legend, inscribed to the left of and beneath the image, reads: "the four winds and the earth surrounded by the ocean." This is a simplified version of Kosmas's world map, which likewise shows a rectangular earth surrounded by a rectangular ocean, with the four winds distributed around the four sides (see fig. 68).[77]

The illustration of Psalm 134 is the most explicit adoption of Kosmas's anti-spherical cosmology in the marginal psalters, but it is not unique. In the Khludov Psalter, both Psalm 101 (fig. 72) and Psalm 103 are accompanied by marginal illuminations labeled "antipodes," as is the text of Psalm 101 in a second ninth-century marginal psalter, today in Paris.[78] These images are clearly derived from Kosmas's visual satire depicting the absurd consequences of a spherical earth (see fig. 70). They do not illustrate a specific passage in either psalm. However, Kosmas cites both psalms repeatedly in support of his theories, especially 101, 26 ("At the beginning it was you, O Lord, who founded the earth, and the heavens are works of your hands") and 103, 2–3, which in turn closely echoes Isaiah 40, 22, one of the cornerstones of Kosmas's system.[79]

Early medieval interest in the *Christian Topography* was driven by multiple factors. Ninth-century readers must have appreciated Kosmas's close attention to the Ark of the Covenant and the Tabernacle, which provided iconophiles with evidence for divine approval of images.[80] But the miniatures of the marginal psalters also reproduced Kosmas's anti-spherical cosmology, in strong contrast to the assumption of a spherical cosmos by the designers and users of the Vatican Ptolemy. If the *Handy Tables* were consulted at court and on campaign, then who formed the ninth-century audience for Antiochene cosmology?

ρλδ. ρλε ἀλληλούϊα·

εἰς τὰ ἅγια καὶ εὐλογεῖτε τὸν κ(ύριο)ν:
Εὐλογήσαι σε κ(ύριο)ς ἐκ Σιὼν ὁ ποιήσας
τὸν οὐρανὸν καὶ τὴν γῆν· δόξα: ικα ιθ

ρλδ. ἀλληλούϊα·

Αἰνεῖτε τὸ ὄνομα κ(υρίο)υ· αἰνεῖτε δοῦλοι κ(ύριο)ν:
Οἱ ἑστῶτες ἐν οἴκῳ κ(υρίο)υ ἐν αὐλαῖς οἴκου
θ(εο)ῦ ἡμῶν:
Αἰνεῖτε τὸν κ(ύριο)ν ὅτι ἀγαθὸς κ(ύριο)ς: ψάλατε τῷ
ὀνόματι αὐτοῦ ὅτι καλόν:
Ὅτι τὸν Ἰακὼβ ἐξελέξατο ἑαυτῷ ὁ κ(ύριο)ς:
Ἰσραὴλ εἰς περιουσιασμὸν ἑαυτῷ:
Ὅτι ἐγὼ ἔγνωκα ὅτι μέγας ὁ κ(ύριο)ς: καὶ ὁ κ(ύριο)ς ἡ-
μῶν παρὰ πάντας τοὺς θεούς:
Πάντα ὅσα ἠθέλησεν ὁ κ(ύριο)ς ἐποίησεν: ἐν τῷ
οὐρανῷ καὶ ἐν τῇ γῇ: ἐν ταῖς θαλάσσαις καὶ
ἐν πάσαις ταῖς ἀβύσσοις:
Ἀνάγων νεφέλας ἐξ ἐσχάτου τῆς γῆς:
ἀστραπὰς εἰς ὑετὸν ἐποίησεν: ὁ ἐξάγων
ἀνέμους ἐκ θησαυρῶν αὐτοῦ:
Ὃς ἐπάταξε τὰ πρωτότοκα Αἰγύπτου:
ἀπὸ ἀνθρώπου ἕως κτήνους:
Ἐξαπέστειλε σημεῖα καὶ τέρατα ἐν μέσῳ
σου Αἴγυπτε: ἐν Φαραὼ καὶ ἐν πᾶσι

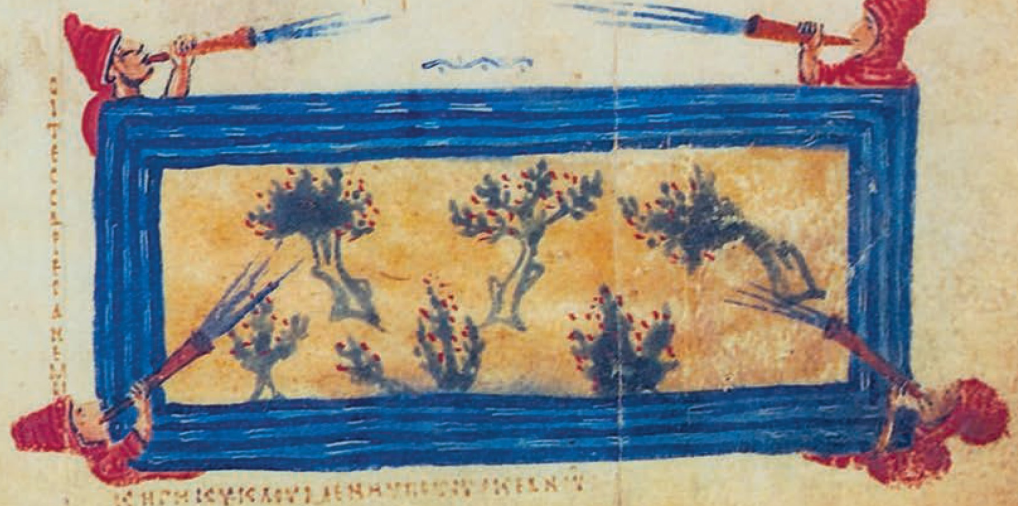
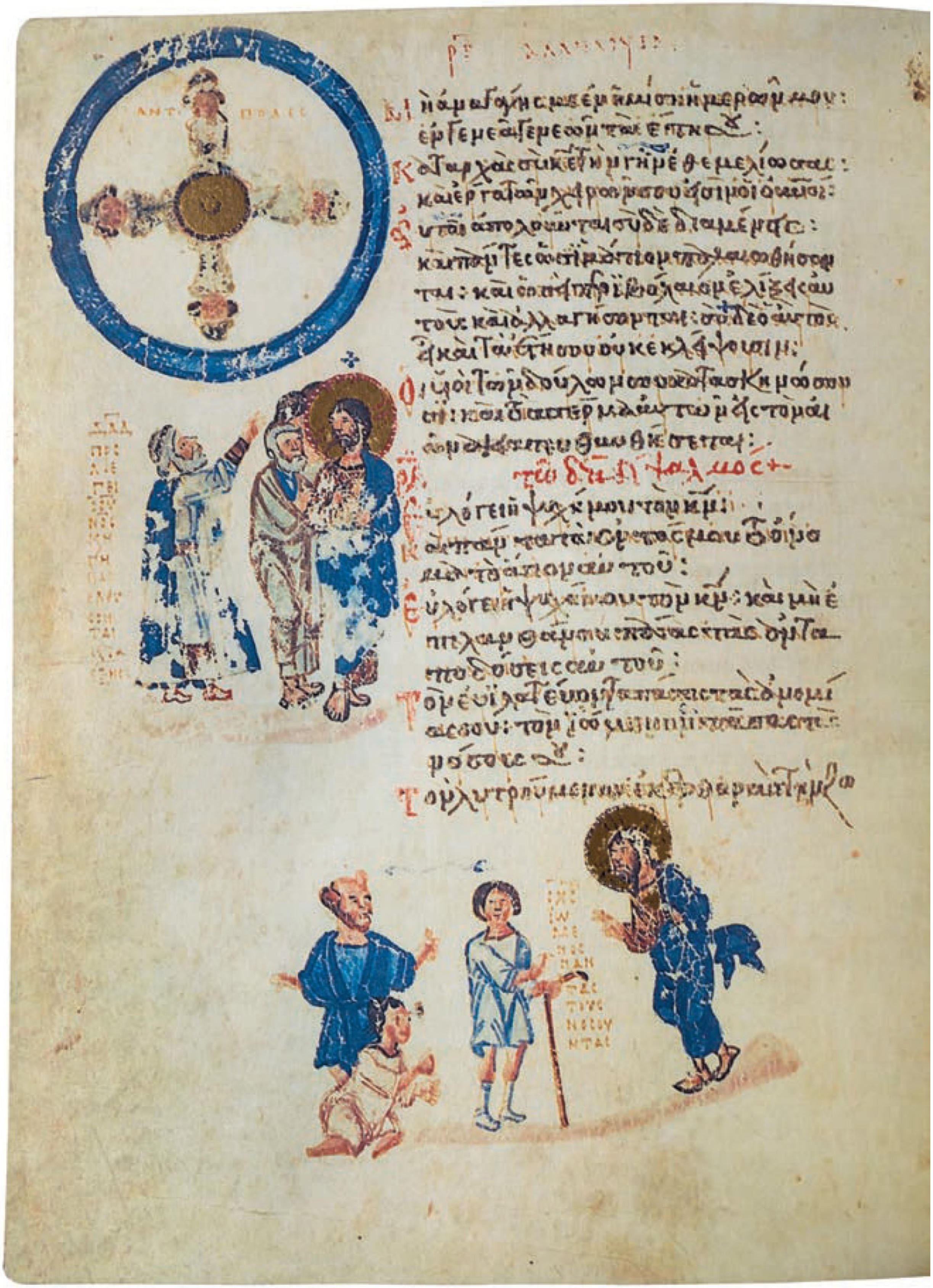

οἱ τέσσαρες ἄνεμοι
ἡ γῆ ἡ κυκλουμένη ὑπὸ τοῦ ὠκεανοῦ

FIGURE 71
The four winds and the earth surrounded by the ocean. Psalter. Probably Constantinople, 9th century. 19.5 × 15 cm (full folio). Moscow, State Historical Museum, Codex 129, fol. 133r.



Μὴ ἀναγάγῃς με ἐν ἡμίσει ἡμερῶν μου:
ἐν γενεᾷ γενεῶν τὰ ἔτη σου:
Κατ' ἀρχὰς σὺ κε̄ τὴν γῆν ἐθεμελίωσας:
καὶ ἔργα τῶν χειρῶν σού εἰσιν οἱ οὐνοί:
αὐτοὶ ἀπολοῦνται σὺ δὲ διαμένεις:
καὶ πάντες ὡς ἱμάτιον παλαιωθήσον
ται: καὶ ὡσεὶ περιβόλαιον ἑλίξεις αὐ
τούς καὶ ἀλλαγήσονται: σὺ δὲ ὁ αὐτὸς
εἶ καὶ τὰ ἔτη σου οὐκ ἐκλείψουσιν:
Οἱ υἱοὶ τῶν δούλων σου κατασκηνώσου
σι: καὶ τὸ σπέρμα αὐτῶν εἰς τὸν αἰ
ῶνα κατευθυνθήσεται:

ρβ̄ τῷ δᾱδ̄ ψαλμός

Εὐλόγει ἡ ψυχή μου τὸν κν̄:
καὶ πάντα τὰ ἐντός μου τὸ ὄνομα
τὸ ἅγιον αὐτοῦ:
Εὐλόγει ἡ ψυχή μου τὸν κν̄: καὶ μὴ ἐ
πιλανθάνου πάσας τὰς ἀνταποδό
σεις αὐτοῦ:
Τὸν εὐιλατεύοντα πάσαις ταῖς ἀνομί
αις σου: τὸν ἰώμενον πάσας τὰς
νόσους σου:
Τὸν λυτρούμενον ἐκ φθορᾶς τὴν ζω

FIGURE 72
The antipodes. Psalter. Moscow, State Historical Museum, Codex 129, fol. 101v.

While the rubrics of the marginal psalters indicate that monastic scribes were involved in their production, the iconophile polemics have led many to seek an episcopal patron.[81] Two primary candidates have emerged: Patriarch Methodios (843–847) and Patriarch Photios, with most recent authors preferring the former.[82] More generally, the marginal psalters demonstrate that the ninth-century audience for anti-spherical cosmology overlapped with strong iconophile sympathies. By contrast, imperial cultivation of astrology in the late eighth and early ninth centuries partially overlapped with imperial iconoclasm.[83]

Sebastian Brock once characterized the iconoclast controversy as an effort to define "how far the divine is allowed to impinge on the human world. The Iconoclasts wished to confine the sphere of divine 'interference' . . . to certain given areas . . . not allowing it to spill out untidily into other areas where humanity was perfectly well in control."[84] For example, the iconoclasts maintained a skeptical attitude toward the posthumous activities of the saints, thus opposing a venerable natural-scientific understanding of causality to the novelties (or excesses) of hagiography.[85] For the emperors of the eighth and ninth centuries, the science of astronomy must have represented one of those "areas where humanity was perfectly well in control." Kosmas's "biblical" cosmology represented an alternate model whose ultimate authority was scriptural.

It would be misleading to present adherence to a spherical model of the cosmos as an "iconoclast" position and adherence to an Antiochene model as "iconophile." Photios, for example, forcefully rejected both imperial iconoclasm and the writings of Kosmas. Like any beneficiary of a solid education in the natural sciences, he would have perceived that Antiochene cosmology presented neither a coherent nor a predictive model of celestial mechanics. But others may have seen in Kosmas an antidote to the arrogance of those who claimed intellectual mastery of the physical universe.

Such an attitude found precedent in the writings of the church fathers. For example, in his widely read commentaries on the first chapters of Genesis, the fourth-century bishop Basil of Caesarea argued as follows: "Although those who have written about the world have argued much about the shape of the earth, whether the earth is a sphere, or a cylinder, or is similar to a disk and is rounded off equally on all sides, or whether it is like a winnowing fan and hollowed out in the center (the cosmographers have suggested all these notions, each one overthrowing the ideas of the other), I shall not be persuaded to say that our version of the creation is of less value because the servant of God, Moses, gave no discussion concerning the shape. . . . Since he left unsaid, as useless for us, things in no way pertaining to us, shall we for this reason believe that the words of the Spirit are of less value than their foolish wisdom? Or shall I rather give glory to him who has not kept our mind occupied with vanities?"[86] The vanity of cosmological speculation was invoked anew in the ninth century, in the iconophile Life of St. John of Psicha, whose hero advised against investigating "the motion of the heavens."[87]

Even after the ninth century, both Antiochene and spherical cosmologies continued to affect how Byzantines pictured the universe, as two miniatures demonstrate. Both are from manuscripts containing the first eight books of the Old Testament, a format known as the Octateuch.[88] Both, furthermore, illustrate Genesis 1, 14–18, the account of the fourth day of creation, when God created the heavenly bodies.[89] However, they present two completely different images of the shape of the cosmos.

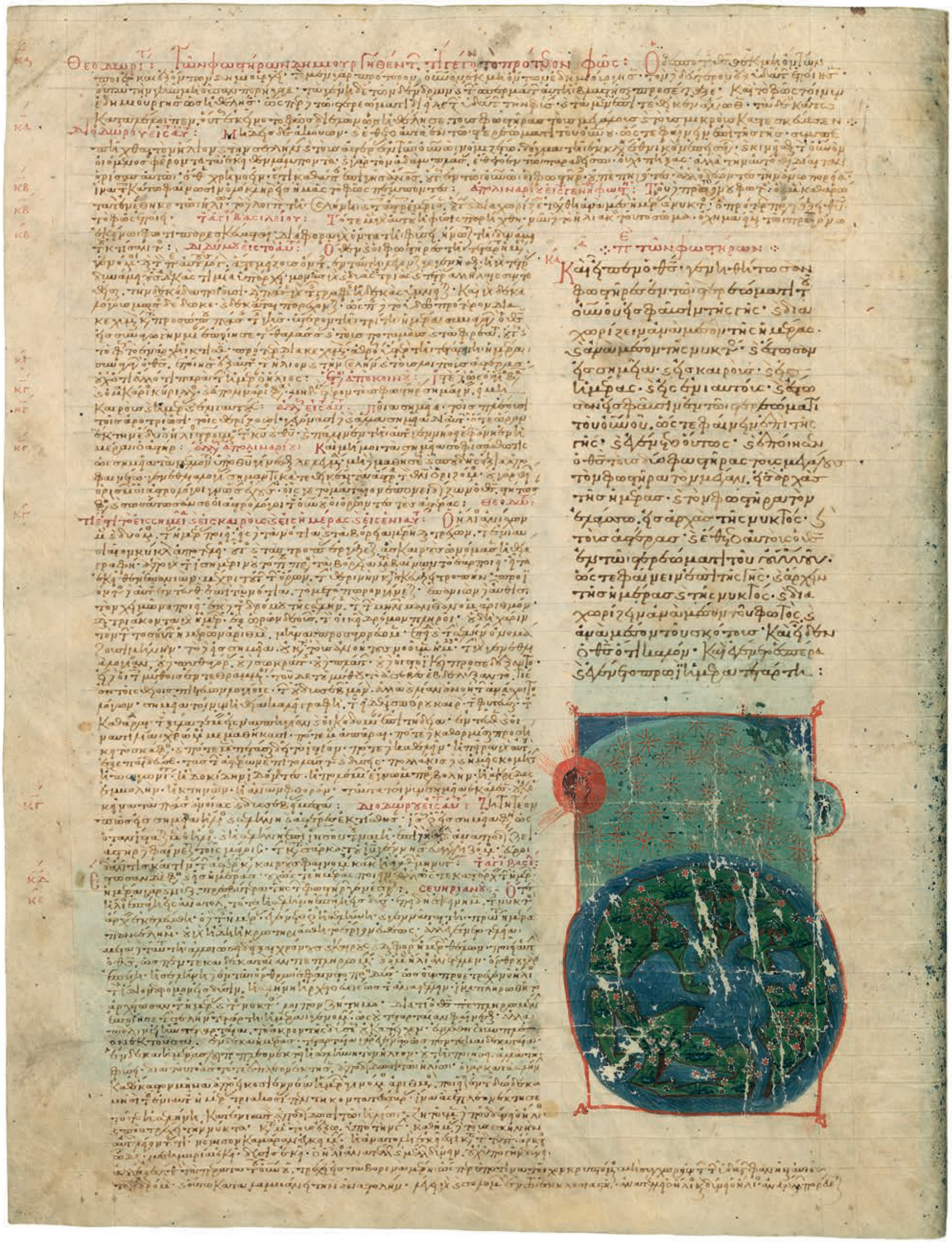


FIGURE 73

Earth, heavens, sun, and moon. Octateuch. Probably Constantinople, third quarter of the 11th century. 32 ×

24.5 cm (full folio). Vatican City, Biblioteca Apostolica Vaticana, Vaticanus graecus 747, fol. 16v. © 2017 Biblioteca Apostolica Vaticana.

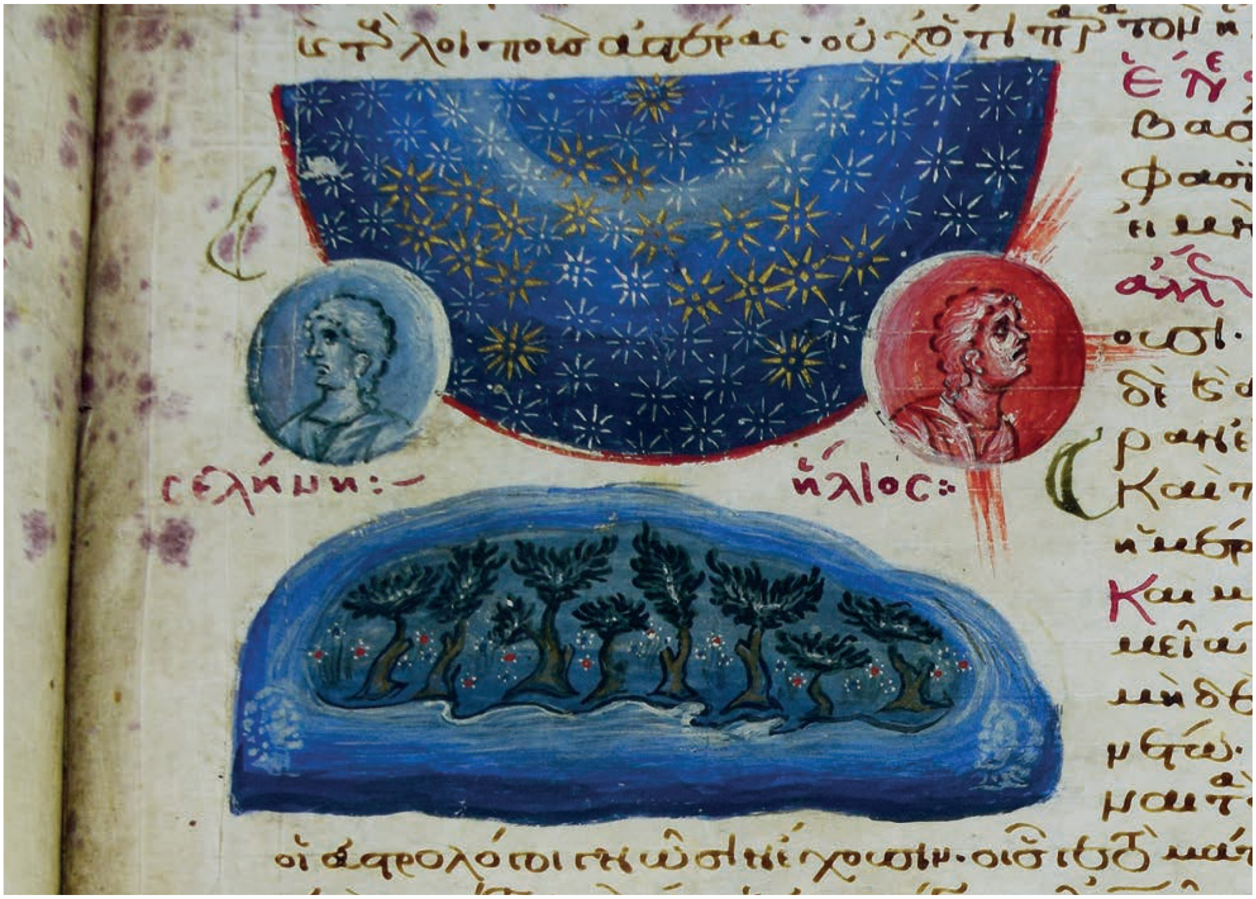


FIGURE 74
Earth, heavens, sun, and moon. Octateuch. Probably Constantinople, second quarter of the 12th century. 42 × 32 cm (full folio). Istanbul, Topkapı Sarayı Müzesi Kütüphanesi, Ms. Gr. 8, fol. 31r.

The first manuscript, today in the Vatican, is usually dated to the third quarter of the eleventh century. Its image of the fourth day of creation depicts a round earth covered by blue waters and green, flower-speckled lands (fig. 73). The curve of the earth is followed by that of the starry heavens above. The discs of the sun, at left, and the moon, at right, stand between heaven and earth, with the moon positioned lower than the sun. The earth and planets break through the miniature's rectangular frame, suggesting that the heavenly sphere, too, would have been shown in a full surrounding circle had space allowed. The image is an abbreviated representation of the spherical cosmos, with the earth at the center of the celestial sphere, and the relative positions of moon and sun preserved.[90]

The second manuscript, now located in the Topkapı collection in Istanbul, is dated to the second quarter of the twelfth century. It opens with a text on the translation of the Bible into Greek that is explicitly attributed to a son of the emperor Alexios Komnenos (r. 1081–1118). The author of the preface was also, in all likelihood, the volume's patron.[91] This manuscript's image of the fourth day of creation depicts the earth as a flat island surrounded by an ocean (fig. 74). The half-disc of the heavens hovers above and separate from the earth, while the discs of the sun and the moon stand in between at equal heights. The image appears to represent the barrel-vaulted Antiochene cosmos, with the vault of heaven inverted to fit the rectangular space provided. This understanding is reinforced a few pages later by the depiction of the creation of the animals (fig. 75). Here the earth, viewed from above, is unambiguously rectangular and surrounded by the ocean. Medallions set at the cardinal points contain images of the four winds. The miniature is a version of the Antiochene world map (see fig. 68).[92]

Two of the most extensively illuminated middle Byzantine manuscripts envision the biblical account of creation through two opposed cosmologies. The prologue to the Topkapı volume, moreover, is attributed to a brother of John II Komnenos, the patron of the Pantokrator Monastery. Whereas John's monastery, as we have seen, contains a wheel of the zodiac, a depiction of a spherical universe (see fig. 54), his brother's manuscript depicts the barrel-vaulted chamber of the *Christian Topography.* The cosmos was depicted variously, not only within medieval Byzantine visual culture as a whole, but within a single imperial family. It would seem that a shared image of the cosmos never generated the consensus in Byzantium that it did in Europe and in the Islamic world. Far from serving to constitute a community, in Byzantium the image of the cosmos became a locus of contest and confusion.

The form of the cosmos also remained a matter of scholarly controversy in later centuries. The *catenae* (chains) of commentaries on Genesis that accompanied many biblical manuscripts, including the illustrated Octateuchs, contain explicit references both to the spherical cosmos of antiquity and to the vaulted chamber of Antiochene cosmology, even if they evoke the latter model more frequently. The prominence of the Antiochene model provoked one twelfth-century intellectual, Michael Glykas, to author multiple texts to refute the vaulted cosmos and defend the sphere.[93] By contrast, one of his contemporaries, known as Peter the Philosopher, defended the Antiochene model, not on the basis of scriptural or Patristic authorities but through purely "rational" arguments.[94] These texts provide a verbal counterpart to the visual dissensus of the Octateuchs. The Byzantine *confusio universorum* adumbrated by the Vatican Ptolemy and the Vatican Kosmas persisted into later centuries. If ninth-century cosmological consensus in Frankish lands established astronomical iconography as an essential element of European visual culture, ninth-century dissensus in Byzantium prevented any one image of the cosmos from acquiring a similar momentum.

WHAT THE EMPEROR KNOWS

The coexistence of two rival cosmological models in Byzantine elite circles helps to explain the absence of a Byzantine counterpart to the Aratean cycles and the images that accompanied the treatise of al-Sufi. The inability of a single model of the cosmos to forge a broad consensus in the Byzantine world surely has multiple causes. One is the willingness of recognized Greek authorities, such as Basil of Caesarea, to leave the question of the form of the earth and universe undecided. However, Basil's homilies on Genesis were translated into Latin in the fifth century and widely read in western Europe, while an Arabic version was prepared in the eleventh century.[95] Perhaps more important was the simple existence of Kosmas's sustained defense of the Antiochene tradition, which finds no counterpart in Latin or Arabic. Thus while some Muslim religious scholars may have distrusted the natural philosophers as much as their Byzantine counterparts did, this attitude never cohered around "a separate tradition of religious cosmological speculation."[96] Finally, within the Byzantine state cosmological agnosticism acquired a political charge when opposed to the imperial claim to astronomical knowledge.

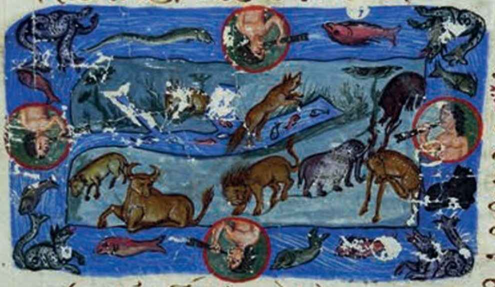
[illegible] ποιήσαντος· καίτοι [illegible] διαδοχῇ τὴν [illegible] ἐχόντων καὶ τὴν [illegible] τούτου [illegible] ἐμοὶ δοκεῖ ὅτι παιδεῦσαι [illegible] ταύτῃ βουλόμενος [illegible] αὐτῷ ὅτι πλείων [illegible] ἐπὶ τῶν [illegible] ζώων [illegible] ὅτι τοῖς σπέρμασιν αὐτῶν καὶ δένδροις ὁ θεὸς τὴν [illegible] διαδοχὴν [illegible] τοῖς δὲ ἑρπετοῖς πᾶσιν [illegible] πρὸς ἀλλήλους [illegible] ὅπως τοίνυν [illegible] πρὸς τοῦτο [illegible] εἰς τὴν τοῦ γένους διαμονήν. ἢ τάχα [illegible] εὐλογίαν [illegible] τοῦ ποιῆσαι.

κζ

Καὶ εἶπεν ὁ θεός· ἐξαγαγέτω ἡ γῆ ψυχὴν ζῶσαν κατὰ γένος τετράποδα καὶ ἑρπετὰ καὶ θηρία τῆς γῆς κατὰ γένος· καὶ τὰ κτήνη κατὰ γένος· καὶ πάντα τὰ ἑρπετὰ τῆς γῆς κατὰ γένος. καὶ ἐγένετο οὕτως. καὶ ἐποίησεν ὁ θεὸς τὰ θηρία κατὰ γένος· καὶ τὰ κτήνη κατὰ γένος αὐτῶν· καὶ εἶδεν ὁ θεὸς ὅτι καλά.

κη

κθ



ὅτι οὐ λέγει [illegible] ὕδατα [illegible] θεοδωρή(του) [illegible] εἰς τὸ αὐτὸ Διοδώρου [illegible]

[illegible] θεοδωρή(του)· διὰ τί τὰ θηρία καὶ τὰ ἑρπετὰ [illegible]

FIGURE 75
Creation of the animals. Probably Constantinople, second quarter of the 12th century. 42 × 32 cm (full folio). Istanbul, Topkapı Sarayı Müzesi Kütüphanesi, Ms. Gr. 8, fol. 32v.

As we have seen, the image of the cosmos served various political uses in the European and Islamic worlds: as a medium for transactional formation of social bonds, and as a comprehensive structure that could lend significance to local traditions and identities. The Vatican Ptolemy, however, suggests a different function. Whereas the Carolingian compendia generated forms of knowledge about the reckoning of time and the shape of the universe that were most effective when widely distributed through various levels of society, the Vatican Ptolemy was a tool for calculations meant to predict future events. The privileged nature of this knowledge is indicated by its use on military campaigns. Its potency was increased the more its circulation was restricted.

This distinction is distilled in the comparison between the solar diagram (see fig. 57) and a superficially similar planetary diagram in a Carolingian volume (fig. 76).[97] This latter manuscript, now in Leiden, contains extracts from the Latin translations of Aratus authored by Germanicus and Avienus.[98] Germanicus was the adopted son of the emperor Tiberius (14–37), and the manuscript opens with his prologue, which can be read as a dedication to the emperor.[99] In its ninth-century context, too, the prologue implies an imperial recipient, while the planetary diagram suggests a candidate. The outermost ring of this full-page miniature contains the twelve signs of the zodiac, painted on a reddish-orange ground, which alternate with golden medallions wherein personifications of the months appear. The earth, at center, is also represented by a personification within a medallion, as are the planets, whose courses are traced by red circles. Along the inner boundary of the zodiac runs a text in minuscule script that continues along the courses and contains extracts from Pliny’s accounts of planetary motion. The diagram reveals those signs of the zodiac within which each planet is farthest from and closest to the earth (the “apogee” and “perigee”). The positions of the medallions, furthermore, “locate the planets in zodiacal signs according to a configuration representing a real date.”[100] The most recent analysis fixes that date on the Paschal Moon, the 17th of April, in 816, the year in which Louis the Pious was crowned emperor.[101]

The Leiden Aratus may be the most robustly imperial of the Carolingian astronomical manuscripts. Like the Vatican Ptolemy, it is richly decorated, and the solar diagram of the Byzantine manuscript could be compared with the planetary diagram of the Carolingian. Both are circular diagrams whose symmetries are tempered by elements of variety, such as the eccentric orbits of the planetary diagram and the gestural variety of the solar diagram. Both also carry certain information only valid for a particular time and thus serve after a fashion as dedication images. However, at this point the substantial differences between the two images begin to intrude. The charioteer at the center of the solar diagram, who straddles solar and imperial iconographies, has no analogue in the planetary diagram, in which the earth, although central, resembles the other planets and does not flirt with royal or imperial iconographies. To this iconographic difference may be added the considerable functional distinctions between the two manuscripts. Whereas the Vatican Ptolemy is a practical handbook that could be used to produce sensitive knowledge, the Leiden Aratus is a showpiece, filled with full-page miniatures of the constellations and lacking the practical tables and treatises that accompanied other Aratean cycles. The miniatures are masterpieces of Carolingian painting, executed by artists firmly in command of a classical idiom. As Erwin Panofsky wrote, the Twins (fig. 77) “might have stepped out of a Pompeian mural.”[102] However, the paintings of the Leiden Aratus forged a connection to the other monastic, episcopal, and provincial libraries in which similar, if less spectacular, versions of the same images were found, whereas the Vatican Ptolemy was distinguished from other contemporary copies of the *Handy Tables* by the presence of images.

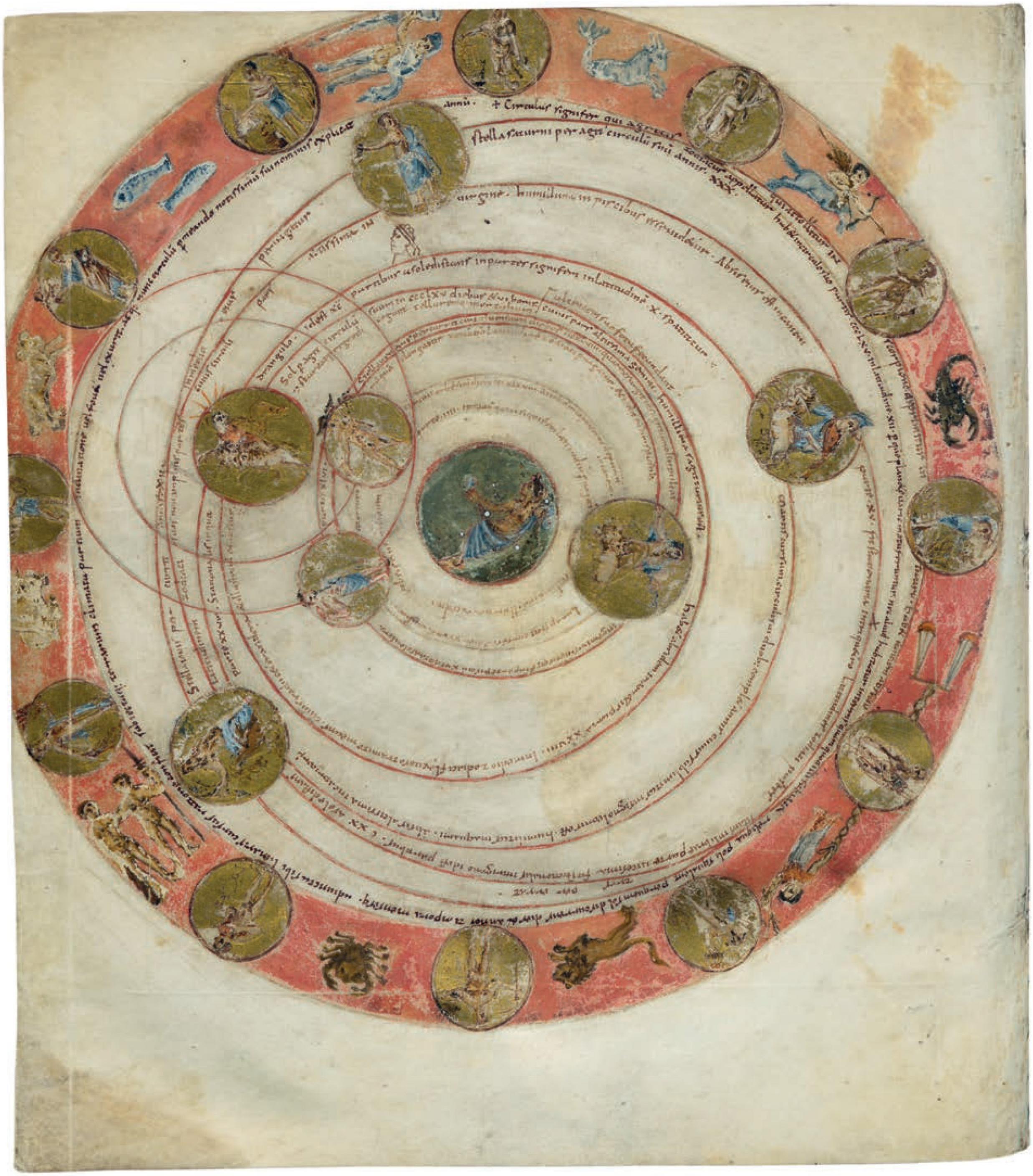

annis. + Circulus signifer qui a grecis zodiacus appellatur
Stella saturni peragit circulum suum annis. XXX.
partibus a sole distant in parte signiferi in latitudine X.

FIGURE 76
Zodiac, planets, and earth. The *Phaenomena* of Aratus as translated by Germanicus. Central Europe, ca. 816. 22.5 × 20 cm (full folio). Leiden, Universiteitsbibliotheek, Vossianus latinus Q 79, fol. 93v.

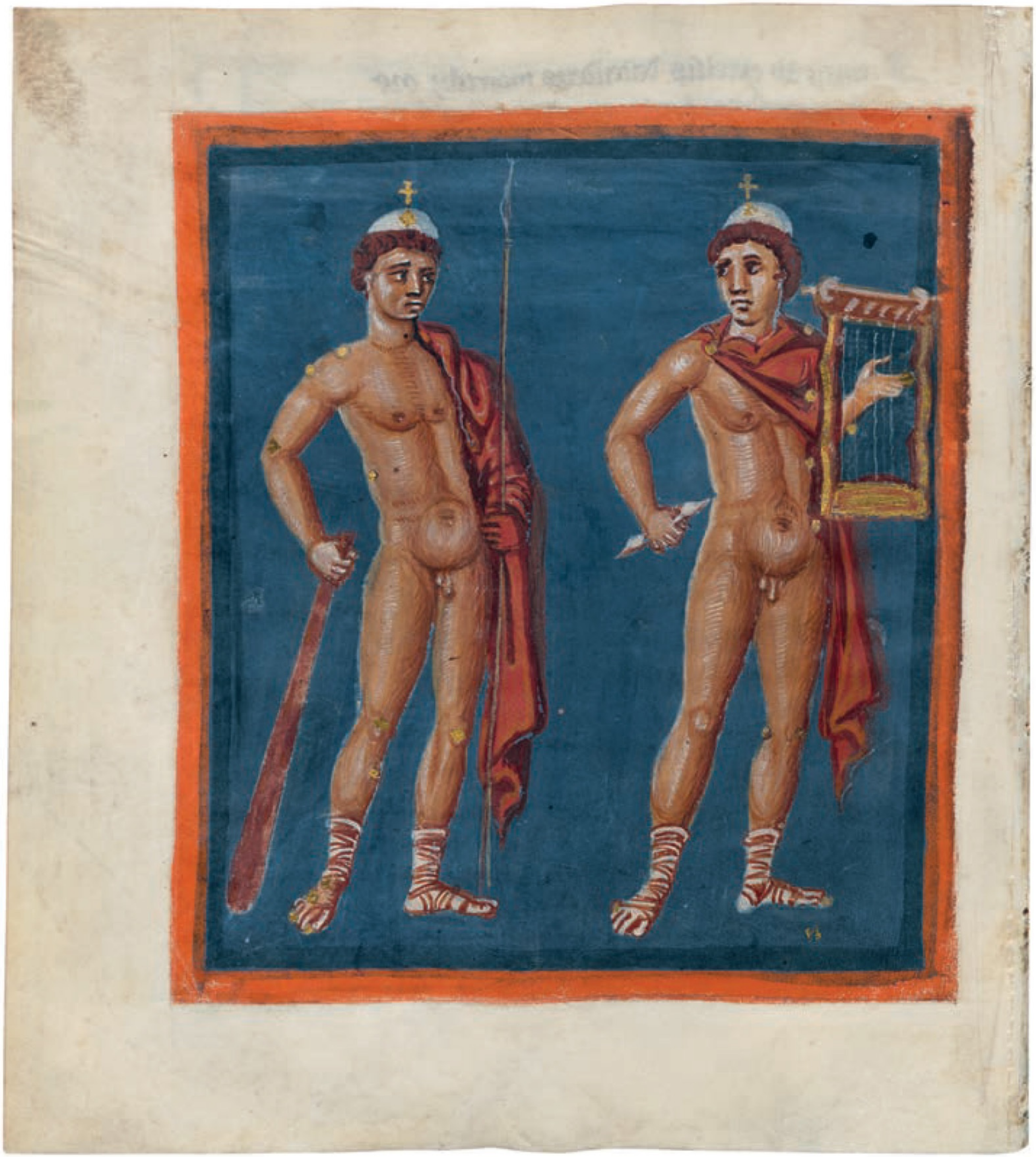


FIGURE 77
Gemini. The *Phaenomena* of Aratus as translated by Germanicus. Leiden, Universiteitsbibliotheek, Vossianus latinus Q 79, fol. 16v.

The solar diagram of the Vatican Ptolemy marks a site of privileged knowledge. This is an image intended for a restricted milieu: if it was not widely copied and shared across the Byzantine empire, this was a sign of its success. Therefore it brings us from community back to solitude: not the tyrannical solitude of the would-be cosmocrat, but the epistemological solitude of the expert. The image of the Byzantine emperor as the master of astronomical knowledge culminated in the figure of Leo VI (886–912). In later Byzantine centuries Leo acquired a largely apocryphal reputation as a prophet, but his posthumous fame formed around a kernel present already during his reign, when he cultivated a reputation for an uncanny knowledge of future events.[103]

In 896, this emperor sent one of his courtiers, Leo Choirosphaktes, to Bulgaria to negotiate the release of Byzantine prisoners. The emissary was promptly imprisoned by the Tsar, Symeon I (893–927), who then initiated a correspondence with the following letter: “The year before last, your emperor seemed most wonderful to us, having announced the forthcoming solar eclipse, and the time of its occurrence, predicting not only the month, week, day, hour, and minute, but also explaining for how long it would prevail. Indeed, it is said that he knows many things about the movement and the course of the stars. Now, if this is true, he also knows the future of the prisoners, and thus he will have told you whether they are to be released by us or not. Let us know, then, which of the two it is to be, and if indeed you know our secret thoughts, you will have the prize of your foreknowledge and of your mission, namely, the receipt of the captives.”[104] In his reply, Choirosphaktes tactfully ignored the ironic tone of the letter and confirmed his emperor’s knowledge.

Eventually Choirosphaktes secured the release of the prisoners and his own return to Constantinople where, at the beginning of the tenth century, he composed a poem to celebrate a new bath in the imperial palace.[105] The verses describe a dizzying array of decoration, both in sculpture and (presumably) mosaic, including imperial portraits, river gods, battle scenes, a lion, and a fire-breathing griffin.[106] One couplet demands our special attention, as it exclaims, “Let the revolving axis of heaven rejoice that Leo perceives the unalterable threads of the bearers of light!”[107] Thus Choirosphaktes declared at home what he had earlier confirmed abroad: the emperor understands celestial mechanics.[108] It is to this figure, of the Byzantine emperor as expert, and his counterparts in contemporary traditions, that we turn in the conclusion.

Conclusion

In later legend, Leo VI became the paradigmatic example of the Byzantine emperor who had personally mastered the knowledge necessary to administer the empire, but he did not invent the role. Choirosphaktes's verses acclaiming the emperor's familiarity with astronomy find a precedent in a poem of three centuries before, penned by George of Pisidia on the infant son of the emperor Herakleios, who shared his father's name. The poet observes the child playing with a ball, which, he remarks, is not only good exercise for the body, but also precocious investigation of the sequence of the heavenly spheres.[1]
Latin and Arabic sources alike recall Herakleios père as an astrologer who foretold by his art the coming of Islam, an earnest parallel to Symeon's ironic acknowledgment of Byzantine promotion of their emperors' astronomical knowledge abroad.[2] And like Leo, Herakleios was also known as an expert at home: the manuscript tradition names him as the author of an introduction to Theon of Alexandria's commentary on the *Handy Tables,* and of a text on brontoscopy.[3]

Frankish rulers also expressed an interest in celestial mechanics, but Carolingian panegyrists represent the imperial relationship to astronomical knowledge in a different fashion than the Byzantine. We have already encountered the relevant passage in Einhard's biography of Charlemagne: although the Frankish king "learned the art of calculation and probed with acute exertion and great curiosity the course of the stars," it is not Charlemagne whom Einhard describes as "the most learned man in the world," but his tutor, Alcuin.[4] As we have seen, Charlemagne relied on Alcuin for the arbitration of astronomical disputes that arose at court, but he was not the only beneficiary of his expertise: Alcuin, for his part, wrote to his royal pupil of his devotion to teaching astronomy to the elites of Tours.

Since we have few Arabic sources contemporary to the Umayyads, it is harder to access the representation of caliphal knowledge of astronomy in the first Islamic century. But perhaps an anecdote related by al-Masʿudi still reflects the parameters of discourse in Umayyad court circles. Al-Walid ibn Yazid, the emir of Qusayr ʿAmra, was with his familiars, drinking wine from a vase of rock crystal, when the moon appeared on the horizon. He asked his companions for the position of the moon, and one replied that it was in a certain sign of the zodiac. Another objected that no, it was in the vase; and indeed, the light of the moon sparkled in the facets of the crystal, and the reflection of the moon appeared in the wine. Al-Walid was overjoyed with this answer and exclaimed, "I would like to drink for *haft hafta*," which is, al-Masʿudi explains, a Persian expression meaning "seven weeks."[5]

For many among al-Masʿudi's readers, the story will have provided one more example of the Umayyad caliph's notorious attachment to worldly pleasures, while al-Walid's invocation of a Persian phrase to characterize his love of wine indicates how it might have been understood by more sympathetic audiences. As Garth Fowden has written, "there was a system and almost a grandeur to [al-Walid's] imbibing" that recalls the ceremonial drinking bouts of the Sasanian emperors.[6] However its readers might feel about wine, the anecdote also represents a specific attitude to astronomical knowledge: assumed among court circles, but not overvalued, and capable of being trumped by a more clever interpretation of the matter at hand. Here too, as at the Frankish court, it is a courtier, and not the caliph, who plays the expert. Late in the tenth century, the astronomer al-Sufi played Alcuin to the Charlemagne of the Buyid emir ʿAdud al-Dawla, who "used to brag about the fact that he had studied astrology under the tutorship of the . . . famous astronomer."[7]

Thus the early medieval sources represent the political position of astronomical knowledge in Byzantium in different fashion than in the Frankish and Islamic states. Byzantine courtiers cultivated the image of the emperor as sage, the figure who alone has mastered the knowledge necessary to rule the empire. Frankish and early Islamic authors, on the other hand, cultivated the image of the ruler as a clever and willing pupil, who recognizes the value of astronomical knowledge and encourages its cultivation, but leaves the finer points to the experts.

In Cassius Dio's account of the two throne rooms of Septimius Severus, with which this study opened, the image of the cosmos generates a series of political relationships, from membership in a universal community to the emperor's privileged knowledge of his own fate. In the early Middle Ages, this dynamic split in two. The image of the cosmos as the marker of imperial privilege was preserved in the late-late Roman state, Byzantium, while the image of the cosmos that unites disparate elites was taken up by the two successor states, the Frankish and the Islamic.

Too stark to capture all the nuances of the realia, this formulation nevertheless distills the conclusions of the foregoing investigation. Khosrow's tyranny, encapsulated in the image of his astral throne, became a powerful negative exemplum in Europe and in the Islamic world. In Byzantium, its impact was tempered, represented not as an actual throne but as an image in a temple. Monumental depictions of the cosmos as a collection of distinct individuals forged connections between elites in the two successor states, just as the images in the computistical compendia were shared and adapted within multiple elite milieux in ninth-century Francia. Astronomical iconography was thereby established as a central element of a shared visual culture in Europe, while a similar process began in the Islamic world at the end of the tenth century. In Byzantium, by contrast, one image of the cosmos acquired courtly prestige as a marker of exclusive knowledge, while enduring interest in a rival image prevented the establishment of a visual consensus.

Neither the iconography of cosmic community nor the iconography of imperial expertise directly represents social realities. Images of authority may indeed conceal the mechanisms of power, the daily business of marshaling and deploying resources.[8] Official Byzantine maintenance of a cosmocratic style of rule served to conceal the emperors' actual reliance on their subjects' consent.[9] At the same time, distinctions between authority and power, state and society, are not absolute. In the early Middle Ages, images of the cosmos did not so much belong to one sphere as mediate between the two. Set into the world, an image of an orderly cosmos becomes a thing to be used, even while it loses any notional determinacy of meaning. It can be adopted and altered, as Henry's court did with the mantle of Ismahel and the Bavarian scribes with the Aachen Encyclopedia. It can be attacked and undermined, as by those Byzantines who lampooned the image of the spherical cosmos with the image of the antipodes, or those Muslims who turned the Mosque of Damascus into a monument to Umayyad tyranny. Finally, it can be deflected and diverted to new purposes altogether, just as a Frankish throne became the Cathedra Petri. All of them productive of meaning, none of these acts is merely symbolic, each representing, instead, an attempt to exploit an existing resource to the benefit of the actors.

Why should images of the cosmos have so often enabled individuals to discover their relationship to a community? The answer must begin with their ability to mediate between self and world, with "cosmic orientation through images."[10] To articulate the outermost sphere with familiar forms tames the vast expanse. For Aratus, the provision of constellations was an act of mercy by Zeus, "wherefore him do men ever worship."[11] Once the dramatis personae of the night sky was established, it was impervious to first-order change: efforts to reorder the stars inevitably failed.[12] The work of al-Sufi systematically compares the pre-Islamic Arabic constellations with their Greco-Roman counterparts, an act of double conservatism.[13] The Greco-Roman system persists to the present day: the constellations that one learns to identify as a child are the same as those depicted in the pages of this book. To keep the old constellations is already a political choice, always preferable to reopening the question and trying to regroup the stars according to a new, shared criterion. Even Kosmas, although he sought to distance himself from "what the pagans call the zodiac," offered no alternative.[14] Like language, the firmament cannot be rearticulated at will.

Despite first-order conservatism, two kinds of second-order choices remained to anyone who would produce an image of the cosmos: those regarding the relations between celestial figures within the image, and those regarding the relations between images and their viewers. The first category embraces the distinction between the explicit cosmos of the star mantle and the allusive cosmos of L'Orange's "cosmic king-ship"; or between the hierarchy of the Vatican Ptolemy's solar diagram and the plurality of the planetary diagram in the Leiden Aratus. The second category includes the context within which an image is encountered: the distinction, for example, between a star mantle on a king and a star mantle on a priest. But it also includes the beholder's share in the work of cosmogony. Thus the Bavarian compendia and the Vatican Kosmas encourage their users to assemble various images into a grand composite, a comprehensive mental image greater in scope than any single painting. In the Vatican Ptolemy and the monastic handbooks, by contrast, the individual diagrams may be deciphered, but offer little incentive to compare and compile.

In pre-capitalist societies, artistic patronage was driven by representatives of the state and by non-state elites, hereditary and religious. Therefore these second-order choices were both constrained by and facilitated intervention in the relation between state and society. In Byzantium, the persistence of Roman state forms despite considerable social change produced a gulf. Since the Byzantine style of rule claimed the image of the cosmos as a marker of distinction, all that was left to non-state actors was to attack its prestige. If the image of the cosmos never assumed a central place in Byzantine visual culture, this was not for a lack of "independent research," as the younger Warburg might have put it, but because no actors benefited from its distribution.

The Franks and Muslims, by contrast, were engaged in state-building enterprises, and they were thus compelled to respond to existing social formations. Images of the cosmos assumed a central role in both visual cultures, not as a product of new observations but because they provided multiple actors with opportunities to express their aspirational positions within emergent polities. This activity spurred iconographic momentum, through which images were produced, received, and adapted more frequently and in more various contexts than in Byzantium.

Nineteenth-and twentieth-century historiographies attempted to explain the emergence of the modern experimental sciences by contrasting Islamic and, above all, European innovation and dynamism with Byzantine stagnation.[15] However, the promotion of a shared image of the cosmos is hardly a prerequisite to (or even beneficial for) the advancement of science. If Byzantium was a society within which multiple spatial models of the cosmos attracted learned adherents, and within which the representation of the cosmos as a whole played only a marginal role in the shared visual culture, so too is our own.

Although the three main traditions of early medieval artistic production drew on a shared inheritance from antiquity, and although they continued to interact through trade, travel, and diplomacy throughout the Middle Ages, they nevertheless developed a host of distinctions in style, iconography, and function. Attempts to account for those distinctions often fall back on ethnic, racial, or religious essentialisms that no longer convince, but that quietly endure for lack of compelling alternatives. As Lawrence Nees has written: “That such essentialist constructions continue to be not only published but assigned to students indicates that those of us who study early-medieval art have either not done a very good job of bringing a newer and different picture to the attention of a wider public or that we have not yet developed a different picture of sufficient interest and conviction to drive from the field the Wagnerian image of the mystic darkness of the north and its people.”[16] To the mystic northerner may be added many other disciplinary phantoms, including the abstracting Semite and the God-bedazzled Byzantine. To banish them is not the work of one study but of many, and the relationships between solitude and community, state and society are but two of many fulcra on which our new narratives might pivot.

NOTES

Introduction

1. Cassius Dio, *Roman History* LXXVII.11; *Dio's Roman History* IX, trans. Earnest Cary (London: William Heinemann, 1927), 261.
2. Herodian, *History* II.9.3–6; *Herodian of Antioch's History of the Roman Empire,* trans. Edward C. Echols (Berkeley: University of California Press, 1961), 63.
3. Compare the domestic mosaics of the third and fourth centuries collected in Hans Georg Gundel, *Zodiakos: Tierkreisbilder im Altertum* (Mainz: Philipp von Zabern, 1992), 234–237.
4. *Panegyrici Latini* IX.20; *In Praise of Later Roman Emperors,* trans. C. E. V. Nixon and Barbara Saylor Rodgers (Berkeley: University of California Press, 1995), 176–177. On this passage see Giusto Traina, "Mapping the World Under Theodosius II," in *Theodosius II: Rethinking the Roman Empire in Late Antiquity,* ed. Christopher Kelly (Cambridge: Cambridge University Press, 2013), 155–158, with references to earlier literature.
5. Tamsyn Barton, *Ancient Astrology* (London: Routledge, 1994), 46–49.
6. From the *Akbarname,* cited in Eva Orthmann, "Circular Motions: Private Pleasure and Public Prognostication in the Nativities of the Mughal Emperor Akbar," in *Horoscopes and Public Spheres: Essays on the History of Astrology,* ed. Günther Oestmann, H. Darrel Rutkin, and Kocku von Stuckrad (Berlin: Walter de Gruyter, 2005), 103.
7. Walter Benjamin, "Zum Planetarium," in *Gesammelte Schriften,* IV.1, ed. Tillman Rexroth (Frankfurt am Main: Suhrkamp, 1972), 146–147.
8. A phrase of Louis Auguste Blanqui, as cited by Walter Benjamin, *The Arcades Project,* trans. Howard Eiland and Kevin McLaughlin (Cambridge, Mass.: Belknap Press, 1999), 113.
9. Lisa Saltzman, *Anselm Kiefer and Art After Auschwitz* (Cambridge: Cambridge University Press, 1999), 54–62 and 115.
10. For a similar geographic frame and a more capacious chronological frame, compare Garth Fowden, *Before and After Muhammad: The First Millennium Refocused* (Princeton: Princeton University Press, 2014).
11. Aby Warburg, "Italienische Kunst und internationale Astrologie im Palazzo Schifanoja zu Ferrara," in *Gesammelte Schriften: Die Erneuerung der heidnischen Antike,* ed. Gertrud Bing (Leipzig: B. G. Teubner, 1932), II.478–479.
12. Dieter Blume, *Regenten des Himmels: Astrologische Bilder in Mittelalter und Renaissance* (Berlin: Akademie Verlag, 2000), 8.
13. So too Thomas F. Mathews, *The Clash of Gods: A Reinterpretation of Early Christian Art* (Princeton: Princeton University Press, 2003), 142–150; e.g., at 149: "Gazing at night at the heavens, the Christian beheld a different universe from his pagan neighbor."
14. On this treatise, *De cursu stellarum,* see Stephen C. McCluskey, "Gregory of Tours, Monastic Timekeeping, and Early Christian Attitudes to Astronomy," *Isis* 81 (1990): 8–22.
15. From the *Doctrina Iacobi nuper baptizati;* cited here after John Haldon, *Byzantium in the Seventh Century: The Transformation of a Culture* (Cambridge: Cambridge University Press, 1990), 39.
16. Barbara Obrist, "Les manuscrits du *De cursu stellarum* de Grégoire de Tours et le manuscrit, Laon, Bibliothèque municipale 422," *Scriptorium* 56 (2002): 335–345.
17. From a treatise by Stephanos the Philosopher, cited here after David Pingree, "Classical and Byzantine Astrology in Sassanian Persia," *Dumbarton Oaks Papers* 43 (1989): 239.

18. On these technologies see fundamentally Barbara Obrist, *La cosmologie médiévale: Textes et images*. I: *Les fondements antiques* (Florence: Sismel–Edizioni del Galluzzo, 2004).
19. Michael W. Herren, “The ‘De imagine Tetrici’ of Walahfrid Strabo: Edition and Translation,” *Journal of Medieval Latin* 1 (1991): 132.
20. Franz Alto Bauer, “Statuen hoher Würdenträger im Stadtbild Konstantinopels,” *Byzantinische Zeitschrift* 96 (2008): 511–512.
21. *Parastaseis Syntomoi Chronikai* 38; *Constantinople in the Early Eighth Century: The* Parastaseis Syntomoi Chronikai, ed. and trans. Averil Cameron and Judith Herrin (Leiden: E. J. Brill, 1984), 103 and 217.
22. Ibn ʿAsākir, *Tāʾrīkh madīnat Dimashq, La Description de Damas d’Ibn ʿAsākir,* trans. Nikita Elisséeff (Damascus: Institut français du Proche-Orient, 2008), 69–70.
23. See especially Dale Kinney, “The Horse, the King and the Cuckoo: Medieval Narrations of the Statue of Marcus Aurelius,” *Word & Image* 18 (2002): 372–398.
24. See especially Jaś Elsner, *Art and the Roman Viewer* (Cambridge: Cambridge University Press, 1997).
25. G. R. D. King, “The Paintings of the Pre-Islamic Kaʿba,” *Muqarnas* 21 (2004): 219–229.
26. G. R. D. King, “Islam, Iconoclasm, and the Declaration of Doctrine,” *Bulletin of the School of Oriental and African Studies* 48 (1985): 267–277.
27. Charles Barber, *Figure and Likeness: On the Limits of Representation in Byzantine Iconoclasm* (Princeton: Princeton University Press, 2002).
28. Thomas F. X. Noble, *Images, Iconoclasm, and the Carolingians* (Philadelphia: University of Pennsylvania Press, 2009).
29. See, e.g., Eva R. Hoffman, “Pathways of Portability: Islamic and Christian Interchange from the Tenth to the Twelfth Century,” *Art History* 24 (2001): 17–50; Leslie Brubaker, “The Elephant and the Ark: Cultural and Material Exchange Across the Mediterranean in the Eighth and Ninth Centuries,” *Dumbarton Oaks Papers* 58 (2004): 175–195; Matthew Canepa, *The Two Eyes of the Earth: Art and Ritual of Kingship Between Rome and Sasanian Iran* (Berkeley: University of California Press, 2009); Matthew Canepa, “Theorizing Cross-Cultural Interaction Among Ancient and Early Medieval Visual Cultures,” *Ars Orientalis* 38 (2010): 7–29.
30. Carpet: S. D. Goitein, *A Mediterranean Society: The Jewish Communities of the Arab World as Portrayed in the Documents of the Cairo Geniza.* IV: *Daily Life* (Berkeley: University of California Press, 1983), 124 and 129; although the word translated by Goitein as “zodiac” could simply denote “a kind of embroidered fabric.” S. D. Goitein and Mordechai A. Friedman, *India Traders of the Middle Ages: Documents from the Cairo Geniza* (Leiden: Brill, 2007), 325 n. 25. Globe: Dietrich Lohrmann, “Das ‘Himmelszelt’ des Sultans al-Kamil von 1232 für Kaiser Friedrich II,” *Historische Zeitschrift* 294 (2012): 297–327; and note the contexts adumbrated by Suzan Yalman, “ ‘Ala al-Din Kayqubad Illuminated: A Rum Seljuq Sultan as Cosmic Ruler,” *Muqarnas* 29 (2012): 151–186.
31. For Byzantine-Islamic polemic on the preservation of Greek learning, see Maria Mavroudi, “Translations from Greek into Latin and Arabic during the Middle Ages: Searching for the Classical Tradition,” *Speculum* 90 (2015): 38–41 and 45 n. 76.
32. “Neutral technology of life”: the phrase used to characterize the role of the “classical” or “pagan” tradition in late antiquity by Peter R. L. Brown, “Art and Society in Late Antiquity,” in *Age of Spirituality: A Symposium,* ed. Kurt Weitzmann (New York: Metropolitan Museum of Art, 1980), 23. For a survey of ancient images of the zodiac and their contexts, see Gundel, *Zodiakos.*
33. Palmyra: Henri Seyrig, Robert Amy, and Ernest Will, *Le temple de Bêl à Palmyre* (Paris: Paul Geuthner, 1975), 45 and Album 58. Jerusalem: Josephus, *Bellum Judaicum,* V.214; trans. H. St. J. Thackeray (London: William Heinemann, 1961), III.265.
34. For an introduction to the monuments and the modern literature, see Lee Levine, *Visual Judaism in Late Antiquity: Historical Contexts of Jewish Art* (New Haven: Yale University Press, 2012), 317–

336.

35. Charles Barber, “The Truth in Painting: Iconoclasm and Identity in Early-Medieval Art,” *Speculum* 72 (1997): 1019–1036.
36. Alois Riegl, “Die mittelalterliche Kalender-illustration,” *Mittheilungen des Instituts für Österreichische Geschichtsforschung* 10 (1889): 29–31. On the place of this essay within the development of Riegl’s thought, see Margaret Olin, *Forms of Representation in Alois Riegl’s Theory of Art* (University Park: Pennsylvania State University Press, 1992), 10–16; and Michael Gubser, *Time’s Visible Surface: Alois Riegl and the Discourse on History and Temporality in Fin-de- Siècle Vienna* (Detroit: Wayne State University Press, 2006), 27–50.
37. From a lecture on “Die antike Götterwelt und die Frührenaissance im Süden und im Norden,” cited in E. H. Gombrich, *Aby Warburg: An Intellectual Biography* (Chicago: University of Chicago Press, 1986), 189.
38. On Saxl see Dorothea McEwan, *Fritz Saxl: Eine Biografie* (Vienna: Böhlau, 2012). On Panofsky see Michael Ann Holly, *Panofsky and the Foundations of Art History* (Ithaca, N.Y.: Cornell University Press, 1984).
39. Fritz Saxl, Hans Meier, and Patrick MacGurk, *Verzeichnis astrologischer und mythologischer illustrierter Handschriften des lateinischen Mittelalters* (Heidelberg: C. Winter, 1915), I.x.
40. Erwin Panofsky and Fritz Saxl, “Classical Mythology in Medieval Art,” *Metropolitan Museum Studies* 4 (1933): 228.
41. Panofsky and Saxl, “Classical Mythology,” 236.
42. Panofsky and Saxl, “Classical Mythology,” 238.
43. Erwin Panofsky, *Renaissance and Renascences in Western Art* (Stockholm: Almqvist & Wiksell, 1960), 84. On the “principle of disjunction,” see Dale Kinney, “Interpretatio Christiana,” in *Maxima Debetur Magistro Reverentia: Essays on Rome and the Roman Tradition in Honor of Russell T. Scott*, ed. Paul B. Harvey and Catherine Conybeare (Como, Italy: New Press, 2009), 117–125; Alexander Nagel and Christopher S. Wood, “Toward a New Model of Renaissance Anachronism,” *Art Bulletin* 88 (2005): 403–415.
44. Rembrandt Duits, “Reading the Stars of the Renaissance: Fritz Saxl and Astrology,” *Journal of Art Historiography* 5 (2011): 3–5.
45. Panofsky and Saxl, “Classical Mythology,” 233–234.
46. The narrative finds a precise analogue in twentieth-century histories of science and philosophy, on which see Mavroudi, “Translations,” 28–36.
47. A volume of essays has been devoted to this term: Martin Treml, Sabine Flach, and Pablo Schneider, eds., *Warburgs Denkraum: Formen, Motive, Materialen* (Paderborn, Germany: Wilhelm Fink, 2014).
48. Aby Warburg, “Heidnisch-antike Weissagung in Wort und Bild zu Luthers Zeiten,” in *Gesammelte Schriften: Die Erneuerung der heidnischen Antike,* ed. Gertrud Bing (Leizpig: B. G. Teubner, 1932), II.491–492.
49. Aby Warburg, “Die Einwirkung der Sphaera Barbarica auf die kosmischen Orientierungs-versuche des Abendlandes,” in *“Per Monstram ad Sphaeram”: Sternglaube und Bilddeutung,* ed. Davide Stimilli (Munich: Döllig und Galitz Verlag, 2008), 70.
50. Aby Warburg, *Schlangenritual: Ein Reisebericht* (Berlin: Verlag Klaus Wagenbach, 2011), 75.
51. Gombrich, *Aby Warburg,* 224.
52. Ernst Dümmler, ed., *Poetae Latini Aevi Carolini* (Berlin: Weidmann, 1881), I.546.
53. On Herzfeld, see Ann C. Gunter and Stefan R. Hauser, eds., *Ernst Herzfeld and the Development of Near Eastern Studies, 1900–1950* (Leiden: Brill, 2004).
54. Ernst Herzfeld, “Der Thron des Khosrô: Quellenkritische und ikonographische Studien über Grenzgebiete der Kunstgeschichte des Morgen-und Abendlandes,” *Jahrbuch der Preußischen Kunstsammlungen* 41 (1920): 1–24.

55. Fritz Saxl, “Frühes Christentum und spätes Heidentum in ihren künstlerischen Ausdrucks formen,” *Wiener Jahrbuch für Kunstgeschichte* 2 (1923): 102–121. On the tendency of European scholars to interpret Islamic “domes of heaven” as “pleasure domes,” see Oleg Grabar, “From Dome of Heaven to Pleasure Dome,” *Journal of the Society of Architectural Historians* 49 (1990): 15–21, esp. 20–21.
56. Karl Lehmann, “The Dome of Heaven,” *Art Bulletin* 27 (1945): 1–27. “Antique background” at 1; “cosmic speculation” at 22.
57. Thomas Mathews, “Cracks in Lehmann’s ‘Dome of Heaven,’ ” *Source* 1 (1982): 12–16; Mathews, *Clash of Gods*, 143–149.
58. Suetonius, *Nero*, 31.2. *Suetonius*, ed. and trans. J. C. Rolfe (London: Heinemann, 1959), II.136–137.
59. For a critical review of the evidence, see Marianne Bergmann, *Der Koloß Neros, die Domus Aurea und der Mentalitätswandel im Rom der frühen Kaiserzeit* (Mainz: Philipp von Zabern, 1993). For a hypothetical reconstruction of the rotating dining hall on the basis of recent excavations, see Françoise Villedieu, “La *cenatio rotunda* de la Maison Dorée de Néron,” *Comptes Rendus des Séances de l’Académie des Inscriptions et Belles-Lettres* 154, no. 3 (2010): 1089–1114.
60. Lehmann, “Dome of Heaven,” 26.
61. Hans Peter L’Orange, *Studies on the Iconography of Cosmic Kingship in the Ancient World* (Oslo: H. Aschehoug, 1953). On L’Orange, see Hjalmar Torp, “Hans Peter L’Orange,” *Acta ad Archaeologiam et Artium Historiam Pertinentia* 5 (1985): vii–xv; and Dale Kinney, “Hans Peter L’Orange on Portraits and the Arch of Constantine: A Lasting Legacy,” *Acta ad Archaeologiam et Artium Historiam Pertinentia* 25, N.S. 11 (2012): 107–126.
62. L’Orange, *Studies*, 103.
63. L’Orange, *Studies*, 13.
64. L’Orange, *Studies*, 118.
65. Johannes Fried, “In den Netzen der Wissensgesellschaft: Das Beispiel des mittelalterlichen Königs- und Fürstenhofes,” in *Wissenskulturen: Beiträge zu einem forschungsstrategischen Konzept*, ed. Johannes Fried and Thomas Kailer (Berlin: Akademie Verlag, 2003), 141–193.
66. Plato, *Republic*, 576a; *The Republic of Plato*, trans. Allan Bloom (New York: Basic, 1991), 256.
67. Marshall Sahlins, “The Stranger-King, or, Elementary Forms of the Politics of Life,” *Indonesia and the Malay World* 36 (2008): 190.

1. Tyranny and Splendor

1. Ferdowsī, *Shāhnāma*, *The Sháhnáma of Firdausí* VIII, trans. Arthur George Warner and Edmond Warner (London: Kegan Paul, Trench, Trübner, 1923), 394.
2. For Ferdowsi’s life and the stages in the composition of the *Shāhnāma*, see Djalal Khalegi-Motlagh, “Ferdowsī, Abu’l-Qāsem. i. Life,” in *Encyclopedia Iranica*. For his centrality to Iranian cultural identity, see Mahmoud Omidsalar, *Poetics and Politics of Iran’s National Epic, the Shāhnāmeh* (New York: Palgrave Macmillan, 2011).
3. Ferdowsī, *Sháhnáma of Firdausí* VIII.407.
4. For *tāqdis* as “arch-like” see Herzfeld, “Thron des Khosrô,” 1 fn. 3 (“fornici similis”).
5. Al-Thaʿālibī, *Taʾrīkh Ghurar al-siyar, Histoire des rois des Perses*, ed. and trans. H. Zotenberg (Paris: Imprimerie Nationale, 1900), 698–699. Balʿamī, *Tārīkh, Chronique de Tabari, traduite sur la version persane d’Abou- ʿAli Moʿhammed Belʿami*, trans. Hermann Zotenberg (Paris: Imprimerie Impériale, 1869), II.304.
6. Nikephoros, *Short History*, ch. 12; ed. and trans. Cyril Mango (Washington, D.C.: Dumbarton Oaks, 1990), 56–57; for the date, 8–12.
7. Stephan Borgehammar, “Heraclius Learns Humility: Two Early Latin Accounts Composed for the Celebration of *Exaltatio Crucis*,” *Millennium* 6 (2009): 182, with the apparatus (five of the

manuscripts read *thronum;* the sixth reads *thorum,* on which basis Borgehammar emends to *tholum;* discussion of the emendation at 166 n. 71). There are "200–300" extant medieval manuscripts: Borgehammar, "Heraclius," 146; for the date, 159.

8. L'Orange, *Studies,* 116.
9. Compare "the central challenge of early Islam: how, in the absence of sophisticated ruling traditions of their own, were Muslims to institutionalize God's dispensation without assimilating the traditions that they had replaced?" Chase F. Robinson, "Crone and the End of Orientalism," in *Islamic Cultures, Islamic Contexts: Essays in Honor of Professor Patricia Crone,* ed. Behnam Sadeghi *et al.* (Leiden: Brill, 2015), 607; characterizing the argument of Patricia Crone, *Slaves on Horses: The Evolution of the Islamic Polity* (Cambridge: Cambridge University Press, 1980).
10. Finbarr Barry Flood, *The Great Mosque of Damascus: Studies on the Makings of an Umayyad Visual Culture* (Leiden: Brill, 2001), 110.
11. For Khosrow's accession and early reign, see James Howard-Johnston, "Kosrow II," in *Encyclopedia Iranica.*
12. Richard Payne, "Cosmology and the Expansion of the Iranian Empire, 502–628 CE," *Past and Present* 220 (2013): 3–33; "destruction of the Roman empire" at 30. For an analysis of Khosrow's fall and the dissolution of the alliance between aristocratic "Parthian" families and the Sasanian dynasty, see Parvaneh Pourshariati, *Decline and Fall of the Sasanian Empire* (London: I. B. Tauris, 2008); summary, e.g., at 172–173. For the end of Khosrow's reign, see James Howard-Johnston, "Pride and Fall: Khusro II and His Regime, 626–628," in *La Persia e Bisanzio* (Rome: Accademia nazionale dei Lincei, 2004), 93–113.
13. Holger Klein, *Byzanz, der Westen, und das 'wahre' Kreuz: die Geschichte einer Reliquie und ihrer künstlerischen Fassung in Byzanz und im Abendland* (Wiesbaden: Reichert, 2004), 28–31.
14. Mary Whitby, "A New Image for a New Age: George of Pisidia on the Emperor Heraclius," in *The Roman and Byzantine Army in the East,* ed. Edward Dąbrowa (Krakow: Drukarnia Uniwersytetu Jagiellónskiego, 1994), 197–225; quote at 214. Recently on George's work, see James Howard-Johnston, *Witnesses to a World Crisis: Historians and Histories of the Middle East in the Seventh Century* (Oxford: Oxford University Press, 2010), 16–35.
15. *Chronicon Paschale,* s.a. 628; ed. Ludwig August Dindorf (Bonn: Weber, 1832), 728; trans. Michael Whitby and Mary Whitby (Liverpool: Liverpool University Press, 1989), 183. On this remarkable document, see Howard-Johnston, *Witnesses,* 48–49.
16. Yuri Stoyanov, *Defenders and Enemies of the True Cross: The Sasanian Conquest of Jerusalem in 614 and Byzantine Ideology of Anti-Persian Warfare* (Vienna: Verlag der Österreichischen Akademie der Wissenschaften, 2011).
17. Al-Tabarī, *Ta'rīkh,* ed. M. J. de Goeje *et al.* (Leiden: Brill, 1879–1901), I.1009; translation edited by Ehsan Yarshater, various translators for individual volumes (Albany: SUNY Press, 1985–2007); trans. Bosworth, V.300.
18. Al-Tabarī, *Ta'rīkh,* ed. de Goeje et al., I.1010; ed. Yarshater, trans. Bosworth, V.332.
19. Al-Tabarī, *Ta'rīkh,* ed. de Goeje et al., I.1005– 1006; ed. Yarshater, trans. Bosworth, V.325 (translation modified). On the range of exegetical responses to this verse, see Sarah Bowen Savant, *The New Muslims of Post-Conquest Iran: Tradition, Memory, and Conversion* (Cambridge: Cambridge University Press, 2013), 179–183; Nadia Maria El Cheikh, "*Sūrat al-Rūm:* A Study of the Exegetical Literature," *Journal of the American Oriental Society* 118 (1998): 356–364; Nadia Maria El Cheikh, *Byzantium Viewed by the Arabs* (Cambridge, Mass.: Center for Middle Eastern Studies of Harvard University, 2004), 24–33.
20. Sebeos, *The Armenian History Attributed to Sebeos,* trans. R. W. Thomson (Liverpool: Liverpool University Press, 1999), 13 (translation modified).
21. Theophylaktos Simokattes viii.15.7, *The* History *of Theophylact Simocatta,* trans. Michael Whitby and

Mary Whitby (Oxford: Clarendon, 1986), 234 (translation modified).

22. Theophanes, *Chronographia*, s.a. 6114; ed. Carl de Boor (Leipzig: Teubner, 1883–1885), 308; trans. Cyril Mango and Roger Scott (Oxford: Clarendon, 1987), 440 (translation modified).
23. Theophylaktos Simokattes iv.13.7–8; *The* History, 121 (translation modified).
24. Theophylaktos Simokattes iv.11.2; *The* History, 117 (translation modified).
25. Herzfeld, "Thron des Khosrô," 17–20; Saxl, "Frühes Christentum," esp. 102–112; Phyllis Ackerman, "Preliminary Report on Takht-i Sulayman. IV. The Throne of Khusraw (The *Takht-i Taqdis*)," *Bulletin of the American Institute for Iranian Art and Archaeology* 5 (1937): 106–109; Lars-Ivar Ringbom, *Graltempel und Paradies: Beziehungen zwischen Iran und Europa im Mittelalter* (Stockholm: Wahlström & Widstrand, 1951), 68–75.
26. Canepa, *Two Eyes*, 146–149.
27. All of the many cubits in use in the medieval world measured at least 20 in. (51 cm): W. Hinz, "*dhirāʿ*," in *Encyclopedia of Islam, Second Edition.*
28. Ferdowsi's primary source was a text now called the "prose *Shāhnāma* of Abu Mansur," of which only the preface is preserved: Ferdowsī, *Sháhnáma of Firdausí*, I.108–111, with Khaleghi-Motlagh, "Ferdowsī"; and Parvaneh Pourshariati, "The Parthians and the Production of the Canonical Shāhnāmas: Of Pahlavī, Pahlavānī, and the Pahlav," in *Commutatio et Contentio: Studies in the Late Roman, Sasanian, and Early Islamic Near East in Memory of Zeev Rubin*, ed. Henning Börm and Josef Wiesehöfer (Düsseldorf: Wellern, 2010), 377–380. This work in New Persian was sponsored by a Samanid governor of Tus and supervised by his minister, Abu Mansur al-Maʿmari, who oversaw the collection and analysis of Pahlavi texts on Sasanian history. Zeev Rubin, "Hamza al-Isfahānī's Sources for Sasanian History," *Jerusalem Studies in Arabic and Islam* 35 (2008): 46–50; Pourshariati, "Parthians," 357–375. Balʿami's history is a Persian adaptation of the work of al-Tabari, supplemented with additional sources on Sasanian history, including a "*Shāhnāma* of Hamza al-Isfahani" and an anonymous history of Iran. See A. C. S. Peacock, *Mediaeval Islamic Historiography and Political Legitimacy: Balʿamī's Tārīkhnāma* (London: Routledge, 2007); esp. 90. Al-Thaʿalibi's *Ghurar akhbar muluk al-Furs*, dedicated to a Ghaznavid governor of the early eleventh century, has received less scholarly attention than Ferdowsi and Balʿami; even the identity of the author, who may be the famous literary critic of the same name, is unclear. (In favor of their identity, with references to earlier literature, see Savant, *New Muslims*, 133–134 fn. 9.) The text's first editor identified its primary source as a version of a lost Arabic work based on Pahlavi histories conventionally attributed to the eighth-century litterateur Ibn al-Muqaffaʿ, while its many similarities with Ferdowsi have led to the hypothesis that its author knew the prose *Shah-nama* of Abu Mansur: al-Thaʿālibī, *Taʾrīkh*, xxv–xliv, including a substantial collection of divergences between Ferdowsi and al-Thaʿalibi; C. E. Bosworth, "al-Thaʿālibī, Abū Mansūr," in *Encyclopedia of Islam, Second Edition.* For a skeptical discussion of the view of "Ibn al-Muqaffaʿ " as a unitary source, see Zeev Rubin, "Ibn al-Muqaffaʿ and the Account of Sasanian History in the Arabic Codex Sprenger 30," *Jerusalem Studies in Arabic and Islam* 30 (2005): 52–93. Rubin concludes (87) that early medieval authors had access to "many sources of different types" for late Sasanian history.
29. For "horizontal transmission," see Peacock, *Mediaeval Islamic Historiography*, 59–66; Rubin, "Hamza al-Isfahānī," 54.
30. A long-standing theory held that all early Islamic accounts of Sasanian history derived from a single Pahlavi "Book of Kings": see especially Theodor Nöldeke, *Das iranische Nationalepos* (Berlin: de Gruyter, 1920). More recent scholarship holds that, while there was a single official history produced at the Sasanian court, "Book of Kings" may also name a genre, from which many different works circulated throughout the early Islamic period: Rubin, "Hamza al-Isfahānī."
31. Ferdowsī, *Sháhnáma of Firdausí*, VIII.394–395. A useful analytical summary of Ferdowsi's account is given by Herzfeld, "Thron des Khosrô," 2.
32. Al-Thaʿālibī, *Taʾrīkh*, 699; Herzfeld, "Thron des Khosrô," 2–3.

33. On early Islamic literary representations of these ruins, see Sarah Bowen Savant, “Forgetting Ctesiphon: Iran’s Pre-Islamic Past, c. 800–1100,” in *History and Identity in the Late Antique Near East*, ed. Philip Wood (Oxford: Oxford University Press, 2013), 169–186.
34. Al-Thaʿālibī, *Taʾrīkh*, 698–711.
35. Ferdowsī, *Sháhnáma of Firdausí*, VIII.392.
36. Al-Thaʿālibī, *Taʾrīkh*, 687; Ferdowsī, *Sháhnáma of Firdausí*, VIII.354.
37. Ferdowsī, *Sháhnáma of Firdausí*, VIII.407–408; so too al-Thaʿālibī, *Taʾrīkh*, 713–714.
38. Al-Thaʿālibī, *Taʾrīkh*, 718.
39. Nikephoros, *Short History*, 56. This account was adopted with minor changes by the ninth-century *Chronicle* of George Hamartolos and the tenth-century *Chronicle* of Symeon the Logothete: Georgios Monachos, *Chronicon*, ed. Carl de Boor (Leipzig: Teubner, 1904), II.671–672; Symeon Magister, *Chronicon*, ed. Staffan Wahlgren (Berlin: Walter de Gruyter, 2006), 160. Since Herzfeld (“Thron des Khosrô,” 17–20), a passage in the twelfth-century chronicle attributed to Georgios Kedrenos (*Chronicon*, ed. Immanuel Bekker [Bonn: Weber, 1838–1839], I.721–722) has figured prominently in discussions of the “Throne of Khosrow.” Herzfeld believed that Kedrenos’s account could fill a lacuna in the ninth-century *Chronographia* of Theophanes. This argument rested on an incomplete understanding of the sources of Kedrenos, and should be discarded. The account of Kedrenos is better understood as a further variation on that of Nikephoros. See Borgehammar, “Heraclius Learns Humility,” 164–165. For the current understanding of Kedrenos, see Warren Treadgold, *The Middle Byzantine Historians* (Houndmills: Palgrave Macmillan, 2013), 339–341.
40. Borgehammar, “Heraclius Learns Humility,” 182, with the apparatus. Two Carolingian accounts will be discussed later in this chapter. See further, e.g., Herzfeld, “Thron des Khosrô,” 20–24; Barbara Baert, *A Heritage of Holy Wood: The Legend of the True Cross in Text and Image*, trans. Lee Preedy (Leiden: Brill, 2004), 140–163.
41. Nikephoros, *Short History*, 56–57.
42. Borgehammar, “Heraclius Learns Humility,” 184–185.
43. Nikephoros, *Short History*, 56; Borgehammar, “Heraclius Learns Humility,” 182 (“in fano”). In the earlier sources, no location is specified. Thus “no Greek source with any claim to originality locates the object . . . to a named place”: Borgehammar, “Heraclius Learns Humility,” 165. In the twelfth-century chronicle of Georgios Kedrenos (*Chronicon*, I.721), this is located in “the city of Gazakos,” which has suggested to some commentators an identification with the sanctuary of the Sasanian imperial fire, Adur Gushnasp, in western Iran: Ackerman, “Preliminary Report,” 108; Rudolf Naumann, *Die Ruinen von Tacht-e Suleiman und Zendan-e Suleiman* (Berlin: Reimer, 1977), 44 (confidently placing the Taqdis throne in the west iwan); Canepa, *Two Eyes*, 148. For a critical analysis of the literary and archaeological evidence regarding Adur Gushnasp, see Matthew Canepa, “Building a New Vision of the Past in the Sasanian Empire: The Sanctuaries of Kayānsīh and the Great Fires of Iran,” *Journal of Persianate Studies* 6 (2013): esp. 77–84.
44. Nikephoros, *Short History*, 12–14. This (lost, hypothetical) source has been called the “continuation of John of Antioch” (Treadgold, *Middle Byzantine Historians*, 3–4 and 29) and the “second continuation of John of Antioch” (Howard-Johnston, *Witnesses*, 244–250).
45. Borgehammar, “Heraclius Learns Humility” (158–160) writes that it was “composed between the end of the seventh century and c. 750, using material from the 630s.” He is keen to posit oral transmission via “a Greek or Oriental monk,” but a textual intermediary is also possible.
46. *Chronicon Paschale*, ed. Dindorf, 729–730; trans. Whitby and Whitby, 184.
47. Borgehammar, “Heraclius Learns Humility,” 182–183, with apparatus.
48. Nikephoros, *Short History*, 56.
49. Borgehammar, “Heraclius Learns Humility,” 182–183.
50. Nikephoros, *Short History*, 56–57.

51. Borgehammar, “Heraclius Learns Humility,” 184–185.

52. Traditions of universalism: Canepa, *Two Eyes,* 144–149; Garth Fowden, *Empire to Commonwealth: Consequences of Monotheism in Late Antiquity* (Princeton: Princeton University Press, 1993).

53. *Pace* Saxl, “Frühes Christentum,” 107–112.

54. Al-Tabarī, *Taʾrīkh,* ed. de Goeje et al., I.2857; ed. Yarshater, trans. Humphreys, XV.63.

55. M. J. Kister, “‘A Booth like the Booth of Moses . . . : A Study of an Early *Hadīth,*” *Bulletin of the School of Oriental and African Studies* 25 (1962): 50–55. On early uses of this tradition, see David Cook, *Studies in Muslim Apocalyptic* (Princeton, N.J.: Darwin, 2002), 82.

56. A. Fischer et al., “Kaysar,” in *Encyclopedia of Islam, Second Edition.*

57. Avinoam Shalem, “The Fall of al-Madāʾin: Some Literary References Concerning Sasanian Spoils of War in Mediaeval Islamic Treasuries,” *Iran* 32 (1994): 77–81.

58. Nasser Rabbat, “The Dome of the Rock Revisited: Some Remarks on al-Wasiti’s Accounts,” *Muqarnas* 10 (1993): 71–73.

59. Shalem, “Fall of al-Madāʾin,” 78–79.

60. Al-Tabarī, *Taʾrīkh,* ed. de Goeje et al., I.2451; ed. Yarshater, trans. Juynboll, XIII.30.

61. J. Pedersen, “Minbar,” in *Encyclopedia of Islam, Second Edition;* Fritz Meier, “Der Prediger auf der Kanzel (Minbar),” in *Studien zur Geschichte und Kultur des vorderen Orients: Festschrift für Bertold Spuler zum siebzigsten Geburtstag,* ed. Hans R. Roemer and Albrecht Noth (Leiden: Brill, 1981), 225–226; Heribert Busse, “Die Kanzel des Propheten im Paradiesesgarten,” *Die Welt des Islams* 28 (1988): 99–111.

62. For the introduction of the maqsura, see the references collected by K. A. C. Creswell, *Early Muslim Architecture* (Oxford: Clarendon, 1969), I.42. For sitting between the two parts of the khutba, see Fred M. Donner, “Umayyad Efforts at Legitimation: The Umayyads’ Silent Heritage,” in *Umayyad Legacies: Medieval Memories from Syria to Spain,* ed. Antoine Borrut and Paul M. Cobb (Leiden: Brill, 2010), 199. For receiving petitions, see al-Masʿūdī, *Murūj al-dhahab, Les Prairies d’Or,* ed. and trans. C. Barbier de Meynard and Pavet de Courteille (Paris: Imprimerie Impériale [/Natio nale]), 1861–1877, V.74–75. Muʿawiya was also said to have displayed the mantle of the third caliph, his murdered kinsman ʿUthman, on his minbar in Damascus. Since revenge on ʿUthman’s killers was often invoked to justify Umayyad rule, this converted the minbar into a display of caliphal legitimacy. Al-Tabarī, *Taʾrīkh,* ed. de Goeje et al., I.3255; ed. Yarshater, trans. Brockett, XVI.196–197.

63. For the Umayyad minbar as a throne, see, e.g., C. H. Becker, “Die Kanzel im Kultus des alten Islam,” in *Orientalische Studien Theodor Nöldeke zum siebzigsten Geburtstag (2. März 1906) gewidmet,* ed. Carl Bezold (Gieszen, Germany: Töpelmann, 1906), I.341–344.

64. Andrew Marsham, *Rituals of Islamic Monarchy: Accession and Succession in the First Muslim Empire* (Edinburgh: Edinburgh University Press, 2009), 86–89.

65. R. Stephen Humphreys, *Muʿawiya ibn Abi Sufyan: From Arabia to Empire* (Oxford: One-world, 2006), esp. 115–136.

66. Suliman Bashear, *Arabs and Others in Early Islam* (Princeton, N.J.: Darwin, 1997), 18; Aram A. Shahin, “In Defense of Muʿāwiya ibn Abī Sufyān: Treatises and Monographs on Muʿāwiya from the Eighth to the Nineteenth Centuries,” in *The Lineaments of Islam: Studies in Honor of Fred McGraw Donner,* ed. Paul M. Cobb (Leiden: Brill, 2012), 189 fn. 48.

67. Humphreys, *Muʿawiya,* 98–102; Patricia Crone, *God’s Rule: Government and Islam* (New York: Columbia University Press, 2005), 46–47; for “inheritance of sovereign rights” as *sunnat kisra wa-qaysar,* see Ignaz Goldziher, *Muhammedanische Studien* (Halle: Niemeyer, 1889–1890), II.98 fn. 2.

68. For *mulk,* see Crone, *God’s Rule,* 44–47. For *jawr,* see Donner, “Umayyad Efforts,” 188.

69. Jere L. Bachrach, “Marwanid Umayyad Building Activities: Speculations on Patronage,” *Muqarnas* 13 (1996): 27–44; Antoine Borrut, *Entre mémoire et pouvoir: l’espace syrien sous les dernier Omeyyades et les premiers Abbasides (v.72–193/692–809)* (Leiden: Brill, 2011), esp. 383–443.

70. Most recently on Umayyad Damascus, see Nancy Khalek, *Damascus After the Muslim Conquest: Text and Image in Early Islam* (Oxford: Oxford University Press, 2011); and Flood, *Great Mosque.* Still essential is Karl Wulzinger and Carl Watzinger, *Damaskus: Die islamische Stadt* (Berlin: de Gruyter, 1924).
71. Al-Yaʿqūbī, *Kitāb al-Buldān,* ed. Michael de Goeje (Leiden: Brill, 1892), 326; trans. Gaston Wiet (Cairo: Institut français d'archéologie orientale, 1937), 174. Al-Muqaddasī, *Ahsan al-taqāsīm,* ed. Michael de Goeje (Brill: Leiden, 1906), 159; trans. Basil Collins (Reading, U.K.: Garnet, 2001), 135. Jonathan Bloom ("The *Qubbat al-Khadrā*ʾ and the Iconography of Height in Early Islamic Architecture," *Ars Orientalis* 23 [1993],135–36) understands al-Khadraʾ as the earliest example of a group of Islamic urban palaces possessing "celestial" significance on the basis of his translation of the phrase "qubbat al-khadraʾ " as "dome of heaven." The interpretation goes back to Creswell (*Early Muslim Architecture,* I.31), who cites Ibn al-Faqīh to argue that the palace "had a green dome (qubbat al-khadraʾ) which gave its name to the whole edifice." But Ibn al-Faqīh mentions no dome, simply calling the palace "al-khadraʾ " (*Kitāb al-Buldān,* ed. Michael de Goeje [Leiden: Brill, 1885], 180; trans. Henri Massé [Damascus: Institut français de Damas, 1973], 133).
72. Flood, *Great Mosque,* 147, citing Ibn ʿAsakir; paraphrased after Humphreys, *Muʿawiya,* 11.
73. The standard ʿAbbasid histories of al-Tabarī (*Ta*ʾ*rīkh,* ed. de Goeje et al., II.382; ed. Yarshater, trans. Howard, XIX.175) and al-Masʿūdī (*Murūj al-dhahab,* V.158–159) set the presentation of the head to Yazid within the complex. Its display is already assumed in early ʿAlid literature: e.g., the *Maqtal al-Husain* published by Ferdinand Wüstenfeld, "Der Tod des Husein ben ʿAlí und die Rache: Ein historischer Roman aus dem Arabischen," *Abhandlungen der königlichen Gesellschaft der Wissenschaften in Göttingen* 30 (1883): 141. This text preserves substantial elements of the *Maqtal* of Abū Mikhnaf (d. 774) via the intermediary of a *Maqtal* by Hisham ibn al-Kalbi (d. 821?): see Ursula Sezgin, *Abū Mihnaf: Ein Beitrag zur Historiographie der umaiyadischen Zeit* (Leiden: E. J. Brill, 1971), 116–123.
74. Al-Tabarī, *Ta*ʾ*rīkh,* ed. de Goeje et al., II.470– 471; ed. Yarshater, trans. Hawting, XX.51–53. On these events, see especially Gernot Rotter, *Die Umayyaden und der zweite Bürgerkrieg* (Wiesbaden: Kommisionsverlag F. Steiner, 1982), 139–143.
75. Farazdaq, *Dīwān,* trans. R. Boucher (Paris: Adolphe Labitte, 1870), I.285–288.
76. For the characteristic structure of Umayyad panegyric, see Suzanne Pinckney Stetkevych, "Umayyad Panegyric and the Poetics of Islamic Hegemony: Al-Akhtal's *khaffa al-Qatīnu* ('Those that dwelt with you have left in haste')," *Journal of Arabic Literature* 28 (1997): 89–122; quote at 105.
77. For adjacent mosques and cathedrals in greater Syria, see Mattia Guidetti, "The Contiguity Between Churches and Mosques in Early Islamic Bilād al-Shām," *Bulletin of the School of Oriental and African Studies* 76 (2013): 229–258. For later Islamic attempts to come to terms with al-Walid's action, see especially Ibn ʿAsākir, *Tā*ʾ*rīkh,* 29–38. On this section, see Zayde Antrim, "Ibn ʿAsakir's Representations of Syria and Damascus in the Introduction to the *Ta*ʾ*rikh Madinat Dimashq,*" *International Journal of Middle East Studies* 38 (2006): 117–118.
78. Support for the essential elements of these reconstructions is provided below. Full arguments are given in Anderson, "World Image After World Empire: The Ptolemaic Cosmos in the Early Middle Ages, ca. 700–900" (PhD diss., Bryn Mawr College, 2012), 370–377 for the interior divisions and 378–392 for the decoration of the qibla wall.
79. The present masonry dome is a later construction, but al-Walid's mosque certainly also possessed a dome, which is described already by the Umayyad poets, and may have been wooden. See Creswell, *Early Muslim Architecture,* I.167–169.
80. Flood, *Great Mosque,* 118–122 and 141–142.
81. Thus already Wulzinger and Watzinger, *Damaskus,* 157. I understand the Bab al-Khadraʾ (as in Ibn ʿAsākir, *Tā*ʾ*rīkh*, 19–20) to be identical to Bab al-Hadid (as in Ibn Jubayr, *Rihla*, ed. Michael de Goeje [Leiden: Brill, 1907], 261; trans. R. J. C. Broadhurst [London: J. Cape, 1952], 275; and Ibn Battūta,

Rihla, ed. C. Defrémery and B. R. Sanguinetti [Paris: Imprimerie Nationale, 1874–1879], I.210–211; trans. H. A. R. Gibb [Cambridge: Cambridge University Press, 1958–1994], I.132) and the Bab al-Maqsura (as in al-Tabarī, *Taʾrīkh,* ed. de Goeje, II.1790; ed. Yarshater, trans. Hillenbrand, XXVI.143). Flood (*Great Mosque,* 155) rejects the identification of the Bab al-Khadraʾ with the eastern door of the triple gateway based on his belief in the "preeminence" of the maqsura of the Companions in the Umayyad period (e.g., 169, 182).

82. Dorothée Sack, *Resafa IV: Die Große Moschee von Resafa–Rusâfat Hišam* (Mainz: Philipp von Zabern, 1996), 48 for the date; and 69 for a discussion of the door.
83. Ibn Jubayr, *Rihla,* ed. de Goeje, 264; trans. Broadhurst, 274. Multiple traditions attribute construction of the new maqsura to al-Walid's brother, Sulaymān. For example, al-Basrawī, *Tuhfat al-anām fī fadāʾil al-Shām,* ed. ʿAbd al-Azīz Fayyād Harfūsh (Damascus: Dār al-Bashāʿir, 1998), 50, specifies that Sulayman built the maqsura of Khidr, another name for the central maqsura: see Ibn ʿAsākir, *Tāʾrīkh,* 19–20. This is related to the tradition according to which al-Walid died before completion of the mosque, which was completed by Sulayman: e.g., Ibn ʿAsākir, *Tāʾrīkh,* 29–30.
84. So too, e.g., Barbara Finster, "Die Mosaiken der Umayyadenmoschee von Damaskus," *Kunst des Orients* 7 (1970–1971): 138: central mihrab as the "mihrāb der Hutba." A different interpretation is offered by Flood, who argues that the maqsura of the Companions was "religiously and politically preeminent" in the Umayyad period: *Great Mosque,* 169–170. Compare Anderson, "World Image," 374–377.
85. Sack, *Resafa IV,* 9–10 and 21–24.
86. Marsham, *Rituals,* 134–144.
87. A photograph of this segment of wall from after the fire of 1893 is essential for reconstruction of its medieval appearance: Flood, *Great Mosque,* fig. 35.
88. I identify the inscription described as running at the level of the ceiling by al-Istakhrī (*Kitāb al-Masālik,* ed. Michael de Goeje [Leiden: Brill, 1889], 60) and al-Idrīsī (*Idrīsī's Palaestina und Syrien,* ed. Johann Gildemeister [Bonn: Georg, 1885], 14) with the inscription of Sura 102 described by Yāqūt (*Muʿjam al-Buldān,* ed. Ferdinand Wüstenfeld [Leipzig: Brockhaus, 1866–1873], II.593). Sura 102 was also part of the decoration of al-Walid's rebuilt Mosque of the Prophet in Medina: Ibn Rusta, *Kitāb alAʿlāq al-nafīsa,* ed. Michael de Goeje (Leiden: Brill, 1892), 70; trans. Gaston Wiet (Cairo: Publications de la Société de géographie d'Égypte, 1955), 75. Cf. Finster, "Mosaiken," 132; and Ghazi Bisheh, "The Mosque of the Prophet at Madīnah Throughout the First Century A.H. with Special Emphasis on the Umayyad Mosque" (PhD diss., University of Michigan, 1979), 218.
89. E.g., Ibn Jubayr, *Rihla,* ed. de Goeje, 261–262; trans. Broadhurst, 272. Portions of the mosaics on the northern wall were preserved into the nineteenth century: see the watercolor of Spiers reproduced in Flood, *Great Mosque,* color pl. 2.
90. For cities, see al-Basrawī, *Tuhfat al-anām fī fadāʾil al-Shām,* 50; for trees, see Ibn Jubayr, *Rihla,* ed. de Goeje, 262; trans. Broadhurst, 272.
91. Ibn ʿAsākir, *Tāʾrīkh,* 66. Al-Basrawī, *Tuhfat al-anām fī fadāʾil al-Shām,* 50. Henri Saladin, *Manuel d'art musulman.* I: *L'architecture* (Paris: A. Picard, 1907), 85, describing a visit of 1879.
92. Al-Basrawī, *Tuhfat al-anām fī fadāʾil al-Shām,* 50; Yāqūt, Muʿjam al-Buldān, II.593.
93. On the karma, see Flood, *Great Mosque,* 57–113.
94. For the jewels, see Ibn Sasrā, *A Chronicle of Damascus,* ed. and trans. William M. Brinner (Berkeley: University of California Press, 1963), 120b and 161. For the expense, see Ibn ʿAsākir, *Tāʾrīkh,* 53.
95. Ibn Sasrā, *Chronicle,* 120b and 161; al-Muqaddasī, *Ahsan al-taqāsīm,* ed. de Goeje, 158; trans. Collins, 134.
96. So too Flood, *Great Mosque,* 247. This corresponds to the level of the inscriptions at the Mosque of the Prophet in Medina as reconstructed by Jean Sauvaget, *La Mosquée omeyyade de Médine* (Paris: Vanoest, 1947), 79–81 and fig. 3.

97. Ibn ʿAsākir, *Tāʾrīkh*, 55–56. The traditionist is Abu Yusuf Yaʿqub ibn Sufyan. On Ibn ʿAsakir's fidelity to his sources, see James E. Lindsay, ed., *Ibn ʿAsākir and Early Islamic History* (Princeton, N.J.: Darwin, 2001), especially the essays by Steven Judd and by James Lindsay.

98. Ibn ʿAsakir writes that basmala, throne verse, and dedication were spread across the first three bands, while the three suras occupied the fourth, but this is a spatial absurdity.

99. The measurements of the wall are based on Creswell, *Early Muslim Architecture,* I. fig. 90. I follow the text of the foundation inscription as excerpted in Flood, *Great Mosque,* 252. Further discussion at Anderson, "World Image," 384–385. For use of a geometrical grid in the preparation of the Umayyad-era mosaic inscriptions of the Dome of the Rock, see Alain George, *The Rise of Islamic Calligraphy* (London: Saqi, 2010), 60–68.

100. Al-Muqaddasī, *Ahsan al-taqāsīm,* ed. de Goeje, 158; trans. Collins, 134.

101. Al-Nābigha al-Shaibānī, *Dīwān,* ed. Qadrī Māyū (Beirut: Dār al-Kitāb al- ʿArabī, 1995), 111; cf. Henri Lammens, "Le Calife Walīd et le prétendu partage de la Mosquée des Omayyades à Damas," *Bulletin de l'Institut Français d'Archéologie Orientale* 26 (1926): 45.

102. Yāqūt, *Muʿjam al-Buldān,* II.595; translation after Guy LeStrange, *Palestine Under the Moslems* (London: Alexander P. Watt, 1890), 263–264 (translation modified).

103. Al-Nābigha al-Shaibānī, *Dīwān*, 111–112. On this account, see especially Nasser Rabbat, "The Dialogic Dimension of Umayyad Art," *Res* 43 (2003): 78–94.

104. Patricia Crone and Martin Hinds, *God's Caliph: Religious Authority in the First Centuries of Islam* (Cambridge: Cambridge University Press, 1986), 39.

105. See especially the account attributed to Wahb ibn Munabbih in al-Thaʿlabī, *Qisas al-Anbiyā*ʾ (Cairo: Maktabat al-Jumhūrīya al- ʿArabīya, n.d.), 170; trans. William M. Brinner (Leiden: Brill, 2002), 512. For the Solomonic resonance of the karma, see Flood, *Great Mosque,* 57–113, esp. 101–111.

106. Al-Masʿūdī, *Murūj al-dhahab,* ed. Barbier de Meynard and Courteille, V.398–399; Arthur Wormhoudt, *Adab al Minbar: Sermons from Umayyad Times* (Oskaloosa: William Penn College, 1988), 74. For the accession of Sulayman see Reinhard Eisener, *Zwischen Faktum und Fiktion: Eine Studie zum Umayyadenkalifen Sulaimān b. ʿAbdalmalik und seinem Bild in den Quellen* (Wiesbaden: Harrassowitz, 1987), 38–39.

107. Ibn ʿAsākir, *Tāʾrīkh,* cited here after David Cook, "The Beginnings of Islam in Syria during the Umayyad Period" (PhD diss., Univer sity of Chicago, 2002), 232.

108. So too Rabbat, "Dialogic," 93.

109. Cook, *Studies,* 122–136.

110. Al-Istakhrī, *Kitāb al-Masālik*, 60. Ibn Jubayr, *Rihla*, ed. de Goeje, 267–269; trans. Broadhurst, 278–280. Josef W. Meri, *The Cult of Saints Among Muslims and Jews in Medieval Syria* (Oxford: Oxford University Press, 2002), 44–45; Stephennie Mulder, *The Shrines of the ʿAlids in Medieval Syria: Sunnis, Shiʿis and the Architecture of Coexistence* (Edinburgh: Edinburgh Univer sity Press, 2014), 201–220.

111. Syed Akbar Hyder, *Reliving Karbala: Martyrdom in South Asian Memory* (Oxford: Oxford University Press, 2006), 95–98.

112. Anthony Kaldellis, "From Rome to New Rome, from Empire to Nation-State: Reopening the Question of Byzantium's Roman Identity," in *Two Romes: Rome and Constantinople in Late Antiquity,* ed. Lucy Grig and Gavin Kelly (Oxford: Oxford University Press, 2012), 396. For a review of the modern debate regarding Roman/Byzantine identity, see Ioannis Stouraitis, "Roman Identity in Byzantium: A Critical Approach," *Byzantinische Zeitschrift* 107 (2014): 175–220.

113. One may speak of "celestial coronation" in Byzantium throughout the medieval period: Andrea Torno Ginnasi, *L'incoronazione celeste nel mondo bizantino: Politica, ceremoniale, numismatica e arti figurative* (Oxford: Archaeopress Archaeology, 2014).

114. Lawrence Nees, *A Tainted Mantle: Hercules and the Classical Tradition at the Carolingian Court*

(Philadelphia: University of Pennsylvania Press, 1991), 110–143, quote at 129. On Frankish perception of Rome the city and Rome the state, see Rosamond McKitterick, *Perceptions of the Past in the Early Middle Ages* (Notre Dame, Ind.: University of Notre Dame Press, 2006), 35–61.

115. Anne A. Latowsky, *Emperor of the World: Charlemagne and the Construction of Imperial Authority, 800–1229* (Ithaca, N.Y.: Cornell University Press, 2013).
116. Borgehammar, "Heraclius Learns Humility," 146 and fn. 6.
117. In addition to Ado's martyrologium, discussed below, see also Notker, *Patrologia Latina* 131: 1029–1164, description of the throne at 1151C. For the importance of the genre in constructing a Frankish sense of the past, see McKitterick, *Perceptions,* 51–56.
118. Ado, *Le Martyrologe d'Adon,* ed. Jacques Dubois and Geneviève Renaud (Paris: Éditions du Centre national de la recherche scientifique, 1984), 314; compare Borgehammar, "Heraclius Learns Humility," 182–183.
119. Most forcibly by Nikolaus Staubach, *Rex Christianus: Hofkultur und Herrschaftspropaganda im Reich Karls des Kahlen,* part 2: *Die Grundlegung der "religion royale"* (Cologne: Böhlau, 1993).
120. Notably, a poem by John Scottus Eriugena known as the "Aulae siderae": John Scottus, *Carmina,* ed. and trans. Michael W. Herren (Dublin: Dublin Institute for Advanced Studies, 1993), 116–121; English translation in John J. O'Meara, *Eriugena* (Oxford: Clarendon, 1988), 184–186. This may have been written for the dedication of the palatine chapel of Charles at Compiègne in 877, shortly before Charles's death: May Viellard-Troïekouroff, "La chapelle de Charles le Chauve a Compiègne," *Cahiers Archéologiques* 21 (1971): 89–94; and Paul Edward Dutton and Édouard Jeauneau, "The Verses of the *Codex Aureus* of Saint-Emmeram," *Studi Medievali,* ser. 3, no. 24 (1983): 104–112. For an argument relating the poem to Charles's celebra tion of Christmas in Aachen in 869, see Michael W. Herren, "Eriugena's *Aulae Siderae,* the *Codex Aureus,* and the Palatine Church of St. Mary at Compiègne," *Studi Medievali,* ser. 3, no. 28 (1987): 593–608. The beginning of the poem contains an elaborate reflection on the numbers four and eight, in the course of which the twelve signs of the zodiac are invoked, while its conclusion presents a brief ekphrasis of a church. But there is no reason to understand the invocation of the zodiac as "the description of the real decoration of a real church dome in the royal chapel of Charles," as does Bianca Kühnel, *The End of Time and the Order of Things* (Regensburg: Schnell & Steiner, 2003), 166.
121. For the attribution to the court of Charles the Bald, see Michael Peter et al., "Servatiusreliquiar, sog. Reliquienkasten Ottos I.," in *Der Quedlinburger Schatz wieder vereint,* ed. Dietrich Kötzsche (Berlin: Kulturstiftung der Länder, 1992), 52–58; Danielle Gaborit-Chopin, *Ivoires du Moyen Age* (Fribourg, Switzerland: Office du livre, 1978), 190. The fundamental publication is Adolph Goldschmidt, *Die Elfenbeinskulpturen aus der Zeit der karolingischen und sächsischen Kaiser, VIII.–XI. Jahrhundert* (Berlin: Cassirer, 1914), I.32–34, which includes the panel of the Munich casket once housed in Berlin and now destroyed. 160 notes to pages 34–35
122. Peter et al., "Servatiusreliquiar." More elaborate interpretations appear in Wolfgang Hübner, *Zodiacus Christianus: Jüdish-christliche Adaptionen des Tierkreises von der Antike bis zur Gegenwart* (Königstein: Hain, 1983), 39; Evan Gatti, "Reviving the Relic: An Investigation of the Form and Function of the Reliquary of St. Servatius, Quedlinburg," *Athanor* 18 (2000): 7–15; Eliza Garrison, "A Curious Com mission: The Reliquary of St. Servatius in Quedlinburg," *Gesta* 49 (2010): 17–29.
123. Fritz Vollbach, "Das Ellwanger Reliquienkästchen," in *Ellwangen, 764–1964: Beiträge und Untersuchungen zur Zwölfhundertjahrfeier,* ed. Viktor Burr (Ellwangen: Schwabenverlag, 1964), 767–774.
124. Vollbach, "Reliquienkästchen," 773–774.
125. These interpretations were advanced by Percy E. Schramm, "Neuentdeckte Bildnisse Karls des Kahlen, seiner Gemahlin und seines Sohnes (876/7): Ein Beleg für die den Byzantinern nachgeahmte Krone," in *Festschrift Hermann Aubin zum 80. Geburtstag,* ed. Otto Brunner (Wiesbaden: Steiner, 1965), 614–

624; reprinted in Percy E. Schramm, *Kaiser, Könige, und Päpste: Gesammelte Aufsätze zur Geschichte des Mittelalters* (Stuttgart: Hiersemann, 1968– 1971), II.110–118. More cautious is Vollbach, “Reliquienkästchen,” 771.

126. Staubach, *Rex Christianus*, 101.
127. Thus already Vollbach, “Reliquienkästchen,” 769.
128. Concisely on the history of the Cathedra, see Nees, *Tainted Mantle*, 147–149; thoroughly, Michele Maccarrone, “La storia della cattedra,” in *La cattedra lignea di S. Pietro in Vaticano* (Vatican City: Tipografia Poliglotta Vaticana, 1971), 3–70.
129. For the enamels, precious stones, and alloy, see Antonio Ferrua, “Esame strutturale e archeologico,” in *La cattedra lignea*, 111–116.
130. Nees, *Tainted Mantle*, 156–157.
131. Nees, *Tainted Mantle*, 199–234.
132. On this drawing, see Arthur Ashpitel and Alexander Nesbitt, *Two Memoirs on Saint Peters Chair Preserved at Rome* (London: Nichols and Sons, 1870), 6 and pl. II.
133. In his other hand he originally held a scepter: Percy Ernst Schramm, “Kaiser Karl der Kahle: der Stifter des Throns in St. Peter,” in *La cattedra lignea*, 277.
134. For the identifications of the figures, see Kurt Weitzmann, “The Iconography of the Carolingian Ivories of the Throne,” in *La cattedra lignea*, 218–225. Staubach, *Rex Christianus,* 312–318, argues that the constellations are arranged in meaningful pairs.
135. Clearest discussion by Nees, *Tainted mantle,* 178–179; different interpretation by Staubach, *Rex Christianus,* 287–289; but compare Nikolaus Staubach, “Herkules an der ‘Cathedra Petri’,” in *Iconologia sacra: Mythos, Bildkunst und Dichtung in der Religions-und Sozialgeschichte Alteuropas,* ed. Hagen Keller and Nikolaus Staubach (Berlin: Walter de Gruyter, 1994), 393 with fn. 38.
136. Ernst Hollstein, “Die *cathedra lignea* von St. Peter im Vatikan: Jahrringchronologie,” in *Nuove ricerche sulla cattedra lignea di S. Pietro in Vaticano* (Vatican City: Tipografia Poliglotta Vaticana, 1975), 79–103.
137. The first unambiguous references date to the 1500s. See Maccarrone, “Storia,” 11, 16–17, and 35.
138. Schramm, “Kaiser Karl”; Florentine Mütherich, “Der Elfenbeinschmuck des Throns,” in *La cattedra lignea*, 253–273; Lawrence Nees, “Charles the Bald and the *Cathedra Petri*,” in *Charles the Bald: Court and Kingdom,* ed. Margaret T. Gibson and Janet L. Nelson (Aldershot, U.K.: Variorum, 1990), 340–347; Nees, *Tainted mantle,* 151–152.
139. E.g., Maccarrone, “Storia,” 10; Schramm, “Kaiser Karl,” 287–289; Nees, *Tainted Mantle*, 152 and 178; Staubach, *Rex Christianus,* 332–334.
140. “Cosmocrator”: Weitzmann, “Iconography,” 232. An image of Charles as “cosmocrator,” and of his “deificatio” and “apotheosis,” was seen here by Chiara Frugoni, “L’ideologia del potere imperiale nella ‘Cathedra di S. Pietro,’ ” *Bullettino dell’Istituto Storico Italiano per il Medio Evo* 86 (1976–1977): 121. For “deificatio,” see further Staubach, *Rex Christianus,* 299; for “apotheosis,” Paul Edward Dutton, *Charlemagne’s Mustache and Other Cultural Clusters of a Dark Age* (New York: Palgrave Macmillan, 2004), 125.
141. Nees, *Tainted Mantle*, 244–250.
142. For Solomon, see Schramm, “Kaiser Karl,” 292.
143. Staubach, *Rex Christianus,* 292, believes that the portrait allowed the throne to project its intended message even when Charles sat somewhere else.
144. Schramm entertained this idea: see “Kaiser Karl,” 277 (“Beglaubigung des Besitzers bzw. Ausstellers”), 282 (“Bildnis des Stifters”), and 288. Charles was consecrated three times, matching the three crowns depicted on the throne: in Orleans in 848; in Metz in 869; and in Rome in 875. See Janet L. Nelson, *Charles the Bald* (London: Longman, 1992), 155; Janet L. Nelson, “Inauguration rituals,” in *Early Medieval Kingship,* ed. P. H. Sawyer and A. N. Wood (Leeds: University of Leeds, 1977),

60.

145. Franz Alto Bauer, *Das Bild der Stadt Rom im Frühmittelalter: Papststiftungen im Spiegel des* Liber Pontificalis *von Gregor dem Dritten bis zum Leo dem Dritten* (Wiesbaden: Reichert, 2004), 104–106 (Charlemagne) and 117–118 (Constantine); on the triumphal arch, see Paolo Liverani, "Costantino offre il modello della basilica sull'arco trionfale," in *L'orizzonte tardoantico e le nuove immagini, 312–468*, ed. Maria Andaloro (Rome: Jaca Book, 2006), 90–91. Further on the visible presence of the Carolingians within St. Peter's, see Joanna Story, "The Carolingians and the Oratory of Saint Peter the Shepherd," in *Old Saint Peter's, Rome*, ed. Rosamond McKitterick *et al.* (Cambridge: Cambridge University Press, 2013), 257–273.

146. The inscription is preserved in the Einsiedeln syllogue (*Inscriptiones Christianae Urbis Romae* II.20, no. 6), a sign of Carolingian interest in the text.

147. For important discussion of this inscription, see Paolo Liverani, "Chi parla a chi? Epigrafia monumentale e immagine pubblica in epoca tardoantica," in *Using Images in Late Antiquity*, ed. Stine Birk *et al.* (Oxford: Oxbow, 2014), 15–16, 24, and 26–28.

148. For Alcuin's authorship, see Luitpold Wallach, *Alcuin and Charlemagne: Studies in Carolingian History and Literature* (Ithaca, N.Y.: Cornell University Press, 1959), 178–197.

149. Joanna Story et al., "Charlemagne's Black Marble: The Origin of the Epitaph of Pope Hadrian I," *Papers of the British School of Rome* 73 (2005): 157–190.

150. David Howlett, "Two Latin Epitaphs," *Archivum Latinitatis Medii Aevi* 67 (2009): 241 and 243.

151. *Liber Pontificalis*, ed. D. Duchesne (Paris: E. de Boccard, 1955–1957), I.432; trans. Raymond Davis (Liverpool: Liverpool University Press, 1992), 44. For discussion of this passage, see Bauer, *Bild*, 63–66; John Osborne, "Papal Court Culture During the Pontificate of Zacharias (AD 741–52)," in *Court Culture in the Early Middle Ages: The Proceedings of the First Alcuin Conference*, ed. Catherine Cubitt (Turnhout, Belgium: Brepols, 2003), 227–229; John Haldon and Brian Ward-Perkins, "Evidence from Rome for the Image of Christ on the Chalke Gate in Constantinople," *Byzantine and Modern Greek Studies* 23 (1999): 286.

152. L'Orange, *Studies*, 116.

2. Declaration and Transaction

1. E.g., Jürgen Habermas, *The Postnational Constellation: Political Essays*, trans. Max Pensky (Cambridge, Mass.: MIT Press, 2001), esp. 58–112.
2. Finbarr Barry Flood, "From the Golden House to ʿAʾisha's House: Cosmic Kingship and the Rotating Dome as Fact, Fiction, and Metaphor," in *Bamberger Symposium: Rezeption in der islamischen Kunst*, ed. Barbara Finster, Christa Fragner, and Herta Hafenrichter (Stuttgart: Steiner, 1999), 125.
3. Grabar, "Dome of Heaven," 15.
4. For cartography see Elly Dekker, *Illustrating the Phaeonomena: Celestial Cartography in Antiquity and the Middle Ages* (Oxford: Oxford University Press, 2013); for the Aratean tradition see Dieter Blume, Mechtild Haffner, and Wolfgang Metzger, *Sternbilder des Mittelalters: Der gemalte Himmel zwischen Wissenschaft und Phantasie* (Berlin: Akademie Verlag, 2012).
5. Eliza Garrison, *Ottonian Imperial Art and Portraiture: The Artistic Patronage of Otto III and Henry II* (Farnham, U.K.: Ashgate, 2012), 123.
6. Deborah Mauskopf Deliyannis, "Charlemagne's Silver Tables: The Ideology of an Imperial Capital," *Early Medieval Europe* 12 (2003): 169.
7. Thus, he took the concept of the "king of the universe," or "cosmocrator," from Babylonian royal titulature and traced its introduction into Roman political discourse to the reign of Nero: L'Orange, *Studies*, 13, 22, and 28–32.
8. L'Orange, *Studies*, 28–29.

9. On this object, see the catalog entry by Gudrun Bühl in Gudrun Bühl, ed., *Dumbarton Oaks: The Collections* (Washington, D.C.: Dumbarton Oaks Library and Collection, 2008), 166. A very similar roundel is preserved in the Campiello Angaran, Venice. Scholarly opinion on the origins of both (Byzantine or Venetian?) has long been divided: against a Byzantine origin see André Grabar, *L'empereur dans l'art byzantin: Recherches sur l'art officiel de l'empire d'Orient* (Paris: Les Belles Lettres, 1936), 21; and Kurt Weitzmann, review of *Three Byzantine Works of Art* by Hayford Pierce and Royall Tyler, *Art Bulletin* 25 (1943): 163–164.
10. L'Orange, *Studies,* 109.
11. Compare Henry Maguire, "Images of the Court," in *The Glory of Byzantium: Art and Culture of the Middle Byzantine Era, A.D. 843–1261*, ed. Helen C. Evans and William D. Wixom (New York: Metropolitan Museum of Art, 1997), 189. For the political resonance of the tondo's display in the Klosterhof of Prince Carl of Prussia, see Gerd-H. Zuchold, "Der 'Klosterhof' im Park von Schloß Glienicke: Privates Refugium oder Ausdrucksträger eines konservativen Staatsmodells?," in *Schloss Glienicke: Bewohner, Künstler, Parklandschaft*, ed. Jürgen Julier, Susanne Leiste, and Margret Schütte (Berlin: Verwaltung der Staatlichen Schlösser und Gärten, 1987), 241; and Robert S. Nelson, *Hagia Sophia, 1850–1950: Holy Wisdom Modern Monument* (Chicago: University of Chicago Press, 2004), 42. Breakfast nook: Malve Rothkirch, *Prinz Carl von Preußen: Kenner und Beschützer des Schönen, 1801–1883* (Osnabrück: Biblio Verlag, 1981), 146.
12. "Sternenmantel Kaiser Heinrichs II": e.g., in Luitgar Göller, ed., *1000 Jahre Bistum Bamberg, 1007–2007: Unterm Sternenmantel* (Petersberg, Germany: Imhof, 2007), 409. The cloak has a diameter of 9 ft. 9 in. (297 cm) and a radius of 5 ft. 1½ in. (154 cm): Renate BaumgärtelFleischmann, "Der Sternenmantel Kaiser Heinrichs II. und seine Inschriften," in *Epi graphik 1988: Fachtagung für mittelalterlilche und neuzeitliche Epigraphik,* ed. Walter Koch (Vienna: Verlag der Österreichischen Akademie der Wissenschaften, 1990), 109 n. 20.
13. For a thorough discussion of the technical analysis and its implications for the study of the mantle, see BaumgärtelFleischmann, "Sternenmantel"; a hypothetical "reconstruction" of the original mantle is given at 116.
14. A useful schematic drawing of the arrangement of the figures on the star mantle is provided by Hendrik Breuer, "Das Welt gerichts astrolabium des Bamberger Sternen mantels Kaiser Heinrichs II. und die Metamorphosen des Ovid," *Analecta Coloniensia: Jahrbuch der Diözesan-und Dom bibliothek Köln* 6 (2006): 141. On the "Kunigunden mantel," see the catalog entry by Renate BaumgärtelFleischmann in Josef Kirmeier et al., eds., *Kaiser Heinrich II., 1002–1024* (Stuttgart: Theiss, 2002), 380–381.
15. So too Elizabeth Carroll Waldron O'Connor, "The Star Mantle of Henry II" (PhD diss., Columbia University, 1980), 113. Breuer, "Weltgerichtsastrolabium," 91, finds in these apocalyptic elements the basis of a "hochkomplexes Weltgerichtsprogramm," a possible line of interpretation that will not be further pursued here.
16. O'Connor, "Star Mantle," 132.
17. For some possibilities (apostles? elders of the apocalypse?), see O'Connor, "Star Mantle," 130–132.
18. BaumgärtelFleischmann, "Sternenmantel," 116–117 and fn. 43.
19. BaumgärtelFleischmann, "Sternenmantel," 118–119.
20. For virtues, e.g., O'Connor, "Star Mantle," 138–140; for saints, e.g., Blume et al., *Sternbilder,* 154 n. 23.
21. For depictions of the "summer and winter hemispheres" in medieval manuscripts, see Dekker, *Illustrating the Phaenomena,* 118–142.
22. Blume et al., *Sternbilder,* 154.
23. BaumgärtelFleischmann, "Sternenmantel," 119–121. For *usye* = *usu,* see O'Connor, "Star Mantle," 46.

24. For this episode, see Stefan Weinfurter, *Heinrich II. (1002–1024): Herrscher am Ende der Zeiten* (Regensburg: Pustet, 1999), 242–244.
25. BaumgärtelFleischmann, "Sternenmantel," 119–120. On the historical background, see Herbert Bloch, *Monte Cassino in the Middle Ages* (Cambridge: Harvard University Press, 1986), I.13–14.
26. A ceremonial use by the emperor has been assumed most recently by Garrison, *Ottonian Imperial Art,* 123, and by Blume et al., *Sternbilder,* 154: "Der kostbare Mantel . . . könnte bei einer sogenannten Festkrönung, einer zeremoniellen Wiederholung des Krönungsaktes den Kaiser ausgezeichnet haben." The interpretation advanced here is shared by Breuer, "Weltgerichtsastrolabium," 89; and Weinfurter, *Heinrich II.,* 267–268.
27. One still reads the occasional reference to an established tradition of medieval cosmic mantles, but the sources were critically assessed and the construct dismantled by O'Connor, "Star Mantle," 147–158.
28. So too Breuer, "Weltgerichtsastrolabium," 139–140.
29. Liudprand of Cremona, *Embassy,* ch. 12; *The Complete Works of Liudprand of Cremona,* trans. Paolo Squatriti (Washington, D.C.: Catholic University of America Press, 2007), 246–247.
30. Wisdom 18, 24. See Percy Ernst Schramm, *Herrschaftszeichen und Staatssymbolik: Beiträge zu ihrer Geschichte vom dritten bis zum sechzehnten Jahrhundert* (Stuttgart: Hiersemann, 1954–55), II.579.
31. For the star mantle as an unusually well-documented medieval garment, see Renate BaumgärtelFleischmann, "Die Kaisermäntel im Bamberger Domschatz," *Bericht des Historischen Vereins Bamberg* 133 (1997): 94–95.
32. A relation between the two cloaks was first proposed by O'Connor, "Star Mantle," 158–159.
33. On the development of the legend of the healing, see Weinfurter, *Heinrich II.,* 168–169.
34. *Chronica Monasterii Casinensis. Die Chronik von Montecassino,* ed. Hartmut Hoffmann (Han nover: Hahn, 1980), 250; translation after Armand O. Citarella and Henry M. Willard, *The Role of the Treasure in the History of Monte Cassino, 883–1058* (Montecassino, Italy: Pubblicazioni Cassinesi, 1996), 100 (translation modified).
35. Weinfurter, *Heinrich II.,* 117.
36. *Chronica Monasterii Casinensis,* ed. Hoffman, 250; translation after Citarella and Willard, *Role of the Treasure,* 99–100 (translation modified). See further the commentary of Bloch, *Monte Cassino,* I.15–18.
37. Thus already O'Connor, "Star Mantle," 158–159. Compare, e.g., Tertullian, *Adversus Marcionem,* V.6.3; ed. Claudio Moreschini (Paris: Cerf, 1990–2004), V.148; Bede, *De temporum ratione,* ch. 16; ed. Charles William Jones (Turnhout, Belgium: Brepols, 1977), 332; trans. Faith Wallis (Liver pool: Liverpool University Press, 1999), 54.
38. See especially the catalog entry of Joachim M. Plotzek in Anton Legner, ed., *Monumenta Annonis: Köln und Siegburg, Weltbild und Kunst im hohen Mittelalter* (Cologne: Greven & Bechtold, 1975), 172.
39. For this concept of "unwritten rules," see Gerd Althoff, "Ungeschriebene Gesetze: Wie funktioniert Herrschaft ohne schriftlich fixierte Normen?" in *Spielregeln der Politik im Mittelalter* (Darmstadt: Primus, 1997), 282–304.
40. Translation after Caecilia Davis-Weyer, *Early Medieval Art, 300–1150* (Englewood Cliffs, N.J.: Prentice-Hall, 1971), 116; text after Percy Ernst Schramm, *Kaiser, Rom und Renovatio: Studien und Texte zur Geschichte des römischen Erneuerungsgedankens vom Ende des karolingischen Reiches bis zum Investiturstreit* (Leipzig: Teubner, 1929), II.96.
41. Herbert Bloch, "Der Autor der 'Graphia aureae urbis Romae,' " *Deutsches Archiv für Erforschung des Mittelalters* 40 (1984): 55–175, esp. 158: "das einzige theoretische Dokument jener Revolutionsjahre."
42. The connection also drawn by Bloch, "Autor," 102. Already, in more general terms, Schramm, *Kaiser, Rom und Renovatio,* I.206: the author of the Graphia "brauchte . . . nur den wirklichen Ornat seiner

Zeit durch die Einzeichnung einiger antiker und byzantinischer Züge zu korrigieren."

43. Robert Eisler, *Weltenmantel und Himmelszelt: Religionsgeschichtliche Untersuchungen zur Urgeschichte des antiken Weltbildes* (Munich: C. H. Beck, 1910), I.22–25.
44. For the division into three, which is expressed in the earliest manuscripts prior to the introduction of chapter divisions, see David Ganz, "Einhard's Charlemagne: The Characterisation of Greatness," in *Charlemagne: Empire and Society,* ed. Joanna Story (Manchester, U.K.: Manchester University Press, 2005), 39.
45. Einhard, *Vita Karoli Magni,* ch. 25; ed. O. Holder-Egger (Hannover: Hahn, 1911), 30; translation after Thomas F. X. Noble, *Charlemagne and Louis the Pious: Lives by Einhard, Notker, Ermoldus, Thegan, and the Astronomer* (University Park: Pennsylvania State University Press, 2009), 42.
46. On this remarkable document, see Alfred Schultze, "Das Testament Karls des Großen," in *Aus Sozial- und Wirtschaftsgeschichte: Gedächt nisschrift für Georg von Below* (Stuttgart: Kohl hammer, 1928), 48–81; Matthew Innes, "Charlemagne's Will: Piety, Politics and the Imperial Succession," *English Historical Review* 112 (1997): 833–855.
47. The Ravennate *Book of Pontiffs* confirms that the latter instruction was carried out: Agnellus, *Liber pontificalis ecclesiae Ravennatis,* ch. 170; ed. Deborah Mauskopf Deliyannis (Turnhout, Belgium: Brepols, 2006), 350–351.
48. Einhard, *Vita,* ch. 33; ed. Holder-Egger, 40; translation after Noble, *Charlemagne,* 50.
49. Einhard, *Vita,* ch. 33; ed. Holder-Egger, 41; translation after Noble, *Charlemagne,* 50.
50. Thegan, *Gesta Hludowici imperatoris,* ch. 8; ed. Ernst Tremp (Hannover: Hahn, 1995), 188–90; translation after Noble, *Charlemagne,* 199 (translation modified).
51. For the author of the entries for the relevant years, see Janet L. Nelson, *The Annals of St-Bertin* (Manchester, U.K.: Manchester University Press, 1991), 8.
52. *Annales Bertiniani,* s.a. 842; ed. Félix Grat, Jeanne Vielliard, and Suzanne Clémencet (Paris: Klincksieck, 1964), 41; trans. Janet L. Nelson (Manchester, U.K.: Manchester University Press, 1991), 53 (translation modified).
53. So too Blume et al., *Sternbilder,* 45 n. 43; for skepticism, see Rosamond McKitterick, *Charle magne: The Formation of a European Identity* (Cambridge: Cambridge University Press, 2008), 375.
54. Deliyannis, "Charlemagne's Silver Tables," 160–165.
55. A cloverleaf arrangement was proposed by Schramm, *Kaiser, Könige und Päpste,* 318–319 fn. 38.
56. On the Leiden Aratus, see chapter 4 below.
57. The reconstruction by F. N. Estey ("Charlemagne's Silver Celestial Table," *Speculum* 18 [1943]: 112–117) inexplicably places the planets in the outermost ring and arbitrarily sets a "personification of the year" at the center. On the Vatican Kosmas see chapter 4 below.
58. Innes, "Charlemagne's Will," 849.
59. For the early date, see McKitterick, *Charlemagne,* 11–14; for the late date, see Noble, *Charle magne,* 9–13.
60. As argued by Mayke de Jong, *The Penitential State: Authority and Atonement in the Age of Louis the Pious, 814–840* (Cambridge: Cambridge University Press, 2009), 67–69.
61. Einhard, *Vita,* ch. 33; ed. Holder-Egger, 24; translation after Noble, *Charlemagne,* 38.
62. For the events of 817–818, see Jörg Jarnut, "Kaiser Ludwig der Fromme und König Bernhard von Italien," *Studi Medievali,* ser. 3, no. 30 (1989): 637–648. For their representation by court historians, see Rosamond McKitterick, *History and Memory in the Carolingian World* (Cambridge: Cambridge University Press, 2004), 265–273. For alternative currents, see Jong, *Penitential State,* 126–129 and 202–203; for the events of the 830s, see 214–259; and for a translation of the bishops' report, see 271–277.
63. For Einhard's courtly audience, see Ganz, "Einhard," 41.
64. Thegan, *Gesta Hludowici imperatoris,* ch. 8; ed. Tremp, 188–190; translation after Noble,

Charlemagne, 199.

65. Thegan, *Gesta Hludowici imperatoris,* ch. 23; ed. Tremp, 212; translation after Noble, *Charlemagne,* 206.
66. For Thegan as an apologist, see Jarnut, "Ludwig der Fromme," 645–646.
67. A similar argument is made by Marcia Kupfer, "Medieval World Maps: Embedded Images, Interpretive Frames," *Word & Image* 10 (1994): 268–269.
68. Innes, "Charlemagne's Will," 849; and compare Deliyannis, "Charlemagne's Silver Tables," 169.
69. *Anthologia Palatina* IX.822.
70. For the quote, see *Annales regni francorum,* s.a. 796; ed. Friedrich Kurze (Hannover: Hahn, 1895), 98. For wagonloads of gold and silver, see *Annales Nordhumbranis,* s.a. 795; ed. Reinhold Pauli (Hannover: Hahn, 1881), 155.
71. Theodulf, *Carmina,* XLVII; ed. Dümmler, *Poetae Latini,* I.547–548. Dümmler's edition conflates two poems. The poem describing the table begins at line 41: "hoc opus ut fieret Theodulfus episcopus egi" (this work I, Bishop Theodulf, have ordered to be created), as was perceived by Dieter Schaller, "Philologische Untersuchungen zu den Gedichten Theodulfs von Orléans," *Deutsches Archiv für Erforschung des Mittelalters* 18 (1962): 84. Against Schaller's opinion (which I share) see Theodore M. Andersson, *Theodulf of Orléans: The Verse* (Tempe: Arizona Center for Medieval and Renaissance Studies, 2014), 147.
72. Thus already M. A. Vidier, "La mappemonde de Théodulfe et la mappemonde de Ripoll (IXe–XIe siècle)," *Bulletin de géographie historique et descriptive* (1911): 285–313, especially 307. Recent scholars tend to disassociate Theodulf's table from the Ripoll map: see Andreina Contessa, "A Geography of Learning: The World of the Presumed Map of Theodulphe of Orleans and Its Mid-Eleventh- Century Catalan Author," *Miscellanea Bibliothecae Apostolicae Vaticanae* 28 (2011): 55–110, with references to the recent literature.
73. Theodulf, *Carmina,* XLVI; ed. Dümmler, *Poetae Latini,* I.544–547.
74. Alcuin, *Epistolae,* no. 148; ed. Ernst Dümmler, *Epistolae Karolini aevi* II (Berlin: Weidmann, 1895), 238; translation after Stephen Allott, *Alcuin of York, c. A.D. 732 to 804: His Life and Letters* (York: William Sessions, 1974), 94. On the exchange between Alcuin and Charles: Dietrich Lohrmann, "Alcuins Korrespondenz mit Karl dem Grossen über Kalender und Astronomie," in *Science in Western and Eastern Civilization in Carolingian Times,* ed. Paul Leo Butzer and Dietrich Lohrmann (Basel: Birkhäuser, 1993), 79–114.
75. Bede, *De temporum ratione,* ch. 16; ed. Jones, 336; trans. Wallis, 58.
76. On this aspect of the correspondence see Lohrmann, "Alcuins Korrespondenz," 87.
77. Alcuin, *Epistolae,* no. 148; ed. Dümmler, *Epistolae,* 251–253.
78. Arno Borst, *Die karolingische Reichskalender und seine Überlieferung bis ins 12. Jahrhundert* (Hannover: Hahn, 2001), I.337; Arno Borst, *Schriften zur Komputistik im Frankenreich von 721 bis 818* (Hannover: Hahn, 2006), III.1451. On the manuscript see chapter 3 below. A counterpart to this miniature is contained in Vienna, Österreichische Nationalbibliothek, Cod. 387, fol. 165v.
79. Here following Borst, *Karolingische Reichskalender,* I.337, who understands the innermost ring of dots as a representation of the days of the year or degrees of the zodiac, and suggests that the "suns" may also be the half-months of a tropical solar year. Compare Wesley M. Stevens, "Compotistica et astronomica in the Fulda School," in *Saints, Scholars, and Heroes: Studies in Medieval Culture in Honor of Charles W. Jones,* ed. Margot H. King and Wesley M. Stevens (Collegeville, Minn.: Hill Monastic Manuscript Library, 1979), II.48–49.
80. Alcuin, *Epistolae,* nr. 121; ed. Dümmler, *Epistolae,* 176–177; translation after Allott, *Alcuin,* 12 (translation modified).
81. So too Schramm, *Herrschaftszeichen,* I.334; Percy Ernst Schramm and Florentine Mütherich, *Denkmale der deutschen Könige und Kaiser* (Munich: Prestel, 1962–1978), I.66. For Charlemagne's

persistent interest in astronomical questions, which continued after Alcuin's death, see Dutton, *Charlemagne's Mustache*, 97–102.

82. The quarries were identified by Alois Musil, *Kusejr ʿAmra* (Vienna: Verlag der KaiserlichenKöniglichen Hof-und Staatsdruckerei, 1907), 62.
83. The quote is from John Lewis Burckhardt, *Travels in Syria and the Holy Land* (London: J. Murray, 1822), 665. On the well, see Claude Vibert-Guigue, "Les *sāqiya* de Qasr at-Tūba: Culture de l'eau et reflet iconographique," *Syria* 85 (2008): 153–155; Ghazi Bisheh, Thierry Morin, and Claude Vibert-Guigue, "Rapport d'activités à Qusayr ʿAmra," *Annual of the Department of Antiquities of Jordan* 41 (1997): 380–384; Thorkild Schiøler, *Roman and Islamic Water-Lifting Wheels* (Odense: Odense Universitetsforlag, 1973), 93–96. For the significance of water installations at sites of Umayyad state power, Denis Genequand, *Les établissements des élites omeyyades en Palmyrène et au Proche-Orient* (Beirut: Institut français du Proche-Orient, 2012), summary at 392–393.
84. Ghazi Bisheh, "The Umayyad Monuments Between Muwaqqar and Azraq: Palatial Residences or Caravanserais?" in *The Near East in Antiquity: German Contributions to the Archaeology of Jordan, Palestine, Syria, Lebanon and Egypt*, ed. Susanne Kerner (Amman: Al-Kutba, 1992), III.35–41.
85. Al-Muqaddasī, *Ahsan al-taqāsīm*, ed. de Goeje, 250; trans. Collins, 209.
86. Musil, *Kusejr ʿAmra*, 3–4 for the itineraries and 88–89 for the graffiti. For some figural graffiti, see Alison V. G. Betts, "Graffiti from Qusayr ʿAmra: A Note on the Dating of Arabian Rock Carvings," *Arabian Archaeology and Epigraphy* 12 (2001): 96–102.
87. U. J. Seetzen, "Beyträge zur Geographie Arabiens, geschrieben in Jerusalem im May 1806," *Monatliche Correspondenz zur Beförderung der Erd-und Himmelskunde* 18 (1808): 384.
88. For invaluable documentation of the frescoes, which however predates the most recent conservation measures, see Claude Vibert-Guigue and Ghazi Bisheh, *Les peintures de Qusayr ʿAmra: Un bain omeyyade dans la* bādiya *jordanienne* (Beirut: Institut français du Proche-Orient, 2007).
89. For detailed discussion and analysis of the iconography, see Garth Fowden, *Qusayr ʿAmra: Art and the Umayyad Elite in Late Antique Syria* (Berkeley: University of California Press, 2004), with thorough coverage of earlier literature. For recent discussion of the building scenes, see Claude Vibert-Guigue, "Bilderreichtum im Wüstenschloß: Die Bauhand werker zur Zeit der Umaijaden begegnen uns in Kusair Amra (Jordanien)," *Antike Welt* 35, no. 6 (2004): 59–65; Hana Taragan, "Constructing a Visual Rhetoric: Images of Craftsmen and Builders in the Umayyad Palace at Qusayr ʿAmra," *Al-Masaq* 20 (2008): 41–60. For the figures of Job and Jonah, see Gaetano Palumbo and Angela Atzori, eds., *Qusayr ʿAmra: Site Management Plan* (Amman: World Monuments Fund, 2014), 33–34.
90. For the current conservation project, see Palumbo and Atzori, *Qusayr ʿAmra*. My last visit to the site was in December of 2013.
91. See most recently Antoine Borrut, *Entre mémoire et pouvoir*, 418–421; and especially Garth Fowden, "The Umayyad Horizon," *Journal of Roman Archaeology* 25 (2012): 981–982, with references to earlier discussions.
92. See especially Fowden, *Qusayr ʿAmra*, 197–226.
93. Palmubo and Atzori, *Qusayr ʿAmra*, 34. This confirms the hypothesis first advanced by Musil and developed by Fowden in *Qusayr ʿAmra*.
94. Earlier studies that attempted to establish the date of the model on the basis of the positions of the constellations were overly optimistic: Dekker, *Illustrating the Phaenomena*, 260–278; the quote at 262.
95. On the anecdotal quality of the painting of the falling rider, see Oleg Grabar, "La place de Qusayr ʿAmrah dans l'art profane du Haut Moyen Age," *Cahiers Archéologiques* 36 (1988): 81–82.
96. On the representation of al-Walid in ʿAbbasid historiography, see Matthias Vogt, *Figures de califes entre histoire et fiction: Al-Walīd b. Yazīd et al-Amīn dans la représentation de l'historiographie*

arabe de l'époque ʿabbāside (Beirut: Orient-Institut, 2006).

97. See the assessment of Hilary Kilpatrick, "ʿUmar ibn ʿAbd al- ʿAzīz, al-Walīd ibn Yazīd and Their Kin: Images of the Umayyads in the *Kitāb al-Aghānī*," in *Umayyad Legacies: Medieval Memories from Syria to Spain,* ed. Antoine Borrut and Paul M. Cobb (Leiden: Brill, 2010), 63–87.
98. Robert Hamilton, *Walid and His Friends: An Umayyad Tragedy* (Oxford: Oxford University Press, 1988), 35–37. On Hamilton's work and its impact, see Donald Whitcomb and Hamdan Taha, "Khirbat al-Mafjar and Its Place in the Archaeological Heritage of Palestine," *Journal of Eastern Mediterranean Archaeology and Heritage Studies* 1 (2013): 54–55.
99. J. M. F. van Reeth, "La représentation du ciel et du zodiaque dans le palais omayyade de ʿAmrā," in *Le ciel dans les civilisations orientales,* ed. C. Cannuyer, F. Mawet, and J. Ries (Brussels: Société belge d'études orientales, 1999), 137–150; J. M. F. van Reeth, "Die Transfiguration Walīd b. Yazīds," in *Studies in Arabic and Islam: Proceedings of the 19th Congress, Union Européenne des Arabisants et Islamisants, Halle,* 1998, ed. Stefan Leder (Leuven, Belgium: Peeters, 2002), 501–511.
100. Bloom, "*Qubbat al-Khadrā*'," 136.
101. For the diplomatic function, see especially Heinz Gaube, "Die syrischen Wüstenschlösser: Einige wirtschaftliche und politische Gesichtspunkte zu ihrer Entstehung," *Zeitschrift des deutschen Palästina-Vereins* 95 (1979): 182–209. For an even-handed survey of the literature on the function of the "desert castles," see Borrut, *Entre mémoire et pouvoir,* 412–423; Genequand, *Établissements des élites,* 389–396.
102. Frédéric Imbert, "Inscriptions et espaces d'écriture au Palais d'al-Kharrāna en Jordanie," *Studies in the History and Archaeology of Jordan* 5 (1995): 403–416, inscriptions 9–11 at 409–411. Considering the prominence of the signatory and the regularity of the inscriptions themselves, which are inscribed across the engaged stucco columns of the main reception hall, I do not understand Imbert's characterization (at 416) of the inscription of these texts as "un acte 'sauvage.' " Cf. Frédéric Imbert, "Califes, princes, et poètes dans les graffiti du début de l'Islam," *Romano-Arabica* 15 (2015): 69–70.
103. A theme developed extensively by Borrut, *Entre mémoire et pouvoir;* see esp. 396–411 and 434.
104. A connection to the caldarium of Qusayr ʿAmra is suggested by Fowden, *Qusayr ʿAmra,* 123.
105. Farazdaq, *Dīwān,* I.12; translation after Nadia Jamil, "Caliph and *Qutb:* Poetry as a Source for Interpreting the Transformation of the Byzantine Cross on Steps on Umayyad Coinage," in *Bayt al-Maqdis: Jerusalem and Early Islam,* ed. Jeremy Johns (Oxford: Oxford University Press, 1992–1999), II.41 (translation modified).
106. See the remarks of Canepa, *Two Eyes,* 100–106; e.g., at 101: "The Roman and Sasanian empires each conceived of themselves as a universal domain. . . . Although the Romans and Sasanians knew the literal extent of their empires and were aware of peoples and lands outside the borders, ideologically speaking, there was a discrepancy between the world as it was and the world as it ought to be." Compare also the essays collected in Peter Fibiger Bang and Dariusz Kołodziejczyk, eds., *Universal Empire: A Comparative Approach to Imperial Culture and Representation in Eurasian History* (Cambridge: Cambridge University Press, 2012).
107. Sahlins, "Stranger-King," 190.
108. For the Carolingians, see Matthew Innes, "People, Places and Power in Carolingian Society," in *Topographies of Power in the Early Middle Ages,* ed. Mayke de Jong and Francis Theuws (Leiden: Brill, 2001), 397–437, esp. 419–426; and McKitterick, *Charlemagne,* 171–213. For the Ottonians, John W. Bernhardt, *Itinerant Kingship and Royal Monasteries in Early Medieval Germany, c. 936–1075* (Cambridge: Cambridge University Press, 1993), esp. 45–70. For the Umayyads, Borrut, *Entre mémoire et pouvoir,* esp. 396–443.
109. Alcuin, *Disputatio Pippini cum Albino,* 68–73, in *Altercatio Hadriani Augusti et Epicteti philosophi,* ed. Walter Suchier (Urbana: University of Illinois Press, 1939), 140. On this text, see Martha Bayless, "Alcuin's *Disputatio Pippini* and the Early Medieval Riddle Tradition," in *Humour, History and*

Politics in Late Antiquity and the Early Middle Ages, ed. Guy Halsall (Cambridge: Cambridge University Press, 2002), 157–178.

110. Innes, “People,” 421. On the network of royal *villae*, see McKitterick, *Charlemagne*, 184–186.
111. Recently Paul Magdalino, “Byzantium= Constantinople,” in *A Companion to Byzantium*, ed. Liz James (Malden, Mass.: Wiley-Blackwell, 2010), 43–44.

3. Carolingian Consensus

1. Christoph Winterer, “Ewaldi-Decke,” in *Karolingische und ottonische Kunst*, ed. Bruno Reudenbach (Munich: Prestel, 2009), 306–307, with references to earlier literature.
2. For detailed accounts of the iconography of the two pendants, see Wilhelm Nyssen, “Die Ewaldi-Decke aus Sankt Kunibert in Köln,” *Wallraf-Richartz- Jahrbuch* 18 (1956): 72–82.
3. The order and appearance of the signs exhibit some divergences from standard models, on which see Borst, *Karolingische Reichskalender*, 340–341.
4. For the reading of the inscription, with important considerations of its possible interpretations, see Nyssen, “Ewaldi-Decke,” 82–90.
5. So too Elizabeth Coatsworth, “Text and Textile,” in *Text, Image, Interpretation: Studies in Anglo-Saxon Literature and Its Insular Con text in Honour of Éamonn Ó Carragáin*, ed. Alastair Minnis and Jane Roberts (Turnhout, Belgium: Brepols, 2007), 202; and Christoph Winterer, *Das Fuldaer Sakramentar in Göttingen: Benedikti nische Observanz und römische Liturgie* (Petersberg, Germany: Imhof, 2009), 457.
6. Gottfried Semper, *Style in the Technical and Tectonic Arts; or, Practical Aesthetics* [1860–62], trans. Harry Francis Mallgrave and Michael Robinson (Los Angeles: Getty Research Institute, 2004), 82.
7. Marjorie Jean Hall Panadero, “The Labors of the Months and Signs of the Zodiac in Twelfth-Century French Facades” (PhD diss., University of Michigan, 1984); Simona Cohen, *Transformations of Time and Temporality in Medieval and Renaissance Art* (Leiden: Brill, 2014), 87–111.
8. Joachim Gierlichs, *Mittelalterliche Tierreliefs in Anatolien und Nordmesopotamien: Untersuchungen zur figürlichen Baudekoration der Seldschuken, Artuqiden und ihrer Nachfolger bis ins 15. Jahrhundert* (Tübingen: E. Wasmuth, 1996), 125–126 and 211–213; further examples of public display of astral symbols at 126–131.
9. For a useful overview, see Rembrandt Duits, “Celestial Transmissions: An Iconographic Classification of Constellation Cycles in Manuscripts (8th–15th Centuries),” *Scriptorium* 59 (2005): 147–202.
10. See especially Moya Carey, “Al-Sufi and Son: Ibn al-Sufi’s Poem on the Stars and Its Prose Parent,” *Muqarnas* 26 (2009): 181–204; Moya Carey, “Mapping the Mnemonic: A Late Thirteenth-Century Copy of al-Sūfī’s *Book of the Constellations*,” in *Arab Painting: Text and Image in Illustrated Arabic Manuscripts*, ed. Anna Contadini (Leiden: Brill, 2007), 65–71. On high medieval developments in constellation images in Islamic lands, see Persis Berlekamp, *Wonder, Image, and Cosmos in Medieval Islam* (New Haven: Yale University Press, 2011), esp. 123–130. Note further Anna Caiozzo, *Images du ciel d’Orient au Moyen Âge: Une histoire du zodiaque et de ses représentations dans les manuscrits du Proche-Orient musulman* (Paris: Presses de l’Université de Paris-Sorbonne, 2003).
11. Carey, “Al-Sufi,” 200 fn. 17.
12. Blume et al., *Sternbilder*, 49: “Auch wenn die intellektuelle Elite des Hofes christliche Weisheit und antikes, weltliches Wissen zu verbinden suchte, schien es dennoch keineswegs selbstverständlich, den Ausgeburten heidnischer Phantasie in den Klosterbibliotheken ein Existenzrecht im Bild einzuräumen.” For the earliest manuscripts, see discussion of the monastic handbooks below.
13. See especially Borst, *Schriften*, I.78–95.
14. Basel, Universitätsbibliothek, F III 15a: see Barbara Obrist, “La représentation carolingienne du

zodiaque: À propos du manuscrit de Bâle, Universitätsbibliothek, F III 15a," *Cahiers du Civilisation Médiévale* 44 (2001): 3–33. Munich, Bayerische Staatsbibliothek, Clm 14456: see Borst, *Schriften,* I.261–262; Katharina Bierbrauer, *Die vorkarolingischen und karolingischen Handschriften der Bayerischen Staatsbibliothek* (Wiesbaden: Reichert, 1990), 61; Bernhard Bischoff, *Die südostdeutschen Schreibschule und Bibliotheken in der Karolingerzeit* (Wiesbaden: Harrassowitz, 1960–1980), I.195–196.

15. The Basel manuscript is assigned to Fulda on account of its script and its inclusion of the earliest preserved list of books in the monastery's library, for which see Gangolf Schrimpf, ed., *Mittelalterliche Bücherverzeichnisse des Klosters Fulda und andere Beiträge zur Geschichte des Klosters Fulda im Mittelalter* (Frankfurt am Main: J. Knecht, 1992), 3–13. The Munich manuscript was also assigned to Regensburg on paleographic grounds, and further includes the local "Annales sancti Emmerami Ratisponenses maiores" (Borst, *Schriften*, I.261). For the date of the Basel manuscript, see Obrist, "Représentation," 3–5 fn. 1; for the date of the Munich manuscript, see Bischoff, *Südostdeutschen Schreibschule*, I.196.
16. On this folio, Obrist, "Représentation," 8.
17. Obrist, "Représentation," 9.
18. Borst, *Schriften,* I.261 and III.1022; text of the letter at III.1027–1033.
19. So too Dieter Blume, "Wissenschaft und Bilder: Vom Hof Karls des Grossen zur Kloster reform," in *Karolingische und ottonische Kunst,* ed. Bruno Reudenbach (Munich: Prestel, 2009), 523.
20. Edited by Obrist, "Représentation," 12–15.
21. Isidore of Seville, *Etymologiae*, ed. W. M. Lindsay (Oxford: Clarendon, 1911), III.27; trans. Stephen A. Barney *et al.* (Cambridge: Cambridge University Press, 2006), 99. The apparent heterodoxy also noted by Obrist, "Représentation," 7.
22. For a transcription, see Eric Graff, "The Thirteenth Figure in the Munich Computus Zodiac," *Journal for the History of Astronomy* 36 (2005): 333–334.
23. The Hebrew months, for example, were also listed in Bede, *De temporum ratione,* ch. 11; ed. Jones, 312–314; trans. Wallis, 42.
24. Bischoff (*Südostdeutschen Schreibschule,* I.196) saw here a fantastic invention of the draughts-man, while Graff, "Thirteenth Figure," saw the constellation Serpens. Most recently, Blume *et al.* (*Sternbilder,* 41) have proposed that this figure "den wiederkehrenden Kreislauf des Jahres in einer zusätzlichen Metapher zu fassen sucht."
25. Darmstadt, Hessisches Universitäts-und Landes bibliothek, Hs. 684. See Kurt Hans Staub, *Jüngere theologische Texte* (Wiesbaden: Harrassowitz, 2001), 75–76; and Bernhard Bischoff, *Katalog der festländischen Handschriften des neunten Jahrhunderts (mit Ausnahme der wisigotischen)* (Wiesbaden: Harrassowitz, 1998–2014), I.211.
26. The former explanation offered by Blume, "Wissenschaft," 522.
27. Obrist, "Représentation," 30–33. Compare Blume, "Wissenschaft," 536: "klösterliche Wissens kultur vor Beginn der karolingischen Reform."
28. Cologne, Diözesan-und Dombibliothek, MS 83 II. Basic literature includes Blume et al., *Sternbilder*, 266–273; Anton von Euw, "Kompendium der Zeitrechnung, Naturlehre, und Himmelskunde," in *Glaube und Wissen im Mittelalter: Die Kölner Dombibliothek* (Munich: Hirmer, 1998), 136–156; Anton von Euw, "Der *Aratus Latinus* in HS. 83 II der Kölner Dombibliothek," *Römische Historische Mitteilungen* 41 (1999): 405–422; Anton von Euw, "Zeit rech nung, Naturlehre, und Himmelskunde zur Zeit Hildebalds von Köln (vor 787– 818)," *Jahrbuch des Kölnischen Geschichtsvereins* 70 (1998): 1–30. Further, Borst, *Schriften*, I.236–238, II.773–779 and 885–890; Blume, "Wissenschaft," 541–542.
29. The subscription, "Codex Sancti Petri, scriptus sub pio patre Hildebaldo Archiepiscopo," is given on folio 1r, and Hildebald is mentioned again on the manuscript's final folio, 291v: Euw,

“Kompendium,” 141 and 155. Such subscriptions are a hallmark of the Cologne scriptorium: Donald Bullough, “Charlemagne’s ‘Men of God’: Alcuin, Hildebald, and Arn,” in *Charlemagne: Empire and Society,* ed. Joanna Story (Manchester, U.K.: Manchester University Press, 2005), 143. For the basics of Hildebald’s career, see Philippe Depreux, *Prosopo graphie de l’entou-rage de Louis le Pieux (781–840)* (Sigmaringen, Germany: Thorbecke, 1997), 246–247.

30. For the similarity of the first series of diagrams, see Obrist, “Représentation,” 8. On the tradition of Isidorean diagrams, see Michael M. Gorman, “The Diagrams in the Oldest Manuscripts of Isidore’s *De natura rerum,*” *Studi Medievali*, ser. 3, no. 42 (2001): 529–545; and Bruce Eastwood, “The Diagram of the Four Elements in the Oldest Manuscripts of Isidore’s *De natura rerum,*” *Studi Medievali*, ser. 3, no. 42 (2001): 547–564.
31. Jean Martin, *Histoire du texte des Phénomènes d’Aratos* (Paris: Klincksieck, 1956), esp. 11–72; the quote at 42. For the hypothetical location of the translation and revision at Corbie, see H. Le Bourdèlles, *L’Aratus Latinus: Étude sur la culture et la langue latines dans le Nord de la France au VIIIe siècle* (Lille: Université de Lille [1985]).
32. Euw, “Kompendium,” 151.
33. Edited by Ernst Maass, *Commentariorum in Aratum reliquiae* (Berlin: Weidmann, 1898), 190–191.
34. The six miniatures are: Arcturus Maior (155r), Arcturus Minor (155v), the serpent (156r), Hercules (156v), Serpentarius (157r), and Scorpio (157v). The curious painting of a horse-drawn chariot at 154v, perhaps a representation of Luna, was also completed.
35. Blume et al., *Sternbilder,* 44–45 (“Die fremdartigen Bilder . . . dürften wohl eher Abscheu und vielleicht auch Furcht erweckt haben”) and 269–270.
36. Blume et al., *Sternbilder,* 270, suggest a connection to the death of Hildebald in 818.
37. Euw, “*Aratus Latinus,*” esp. 422. For an account of Carolingian manuscript production in which volumes were illuminated by traveling specialists who could be commissioned for specific jobs, see Lawrence Nees, “On Carolingian Book Painters: The Ottoboni Gospels and Its Transfiguration Master,” *Art Bulletin* 83 (2001): 209–239.
38. Stephen C. McCluskey, *Astronomies and Cultures in Early Medieval Europe* (Cambridge: Cambridge University Press, 1998), 135, here writing about Aratean cycles in general.
39. On Hildebald’s duties at court, see above all Josef Fleckenstein, *Die Hofkapelle der deutschen Könige* (Stuttgart: Hiersemann, 1959–1966), I.49–52; also Euw, “Zeitrechnung,” 1–3; Bullough, “Charlemagne’s ‘Men of God,’ ” 142–146.
40. Laon, Bibliothèque Municipale, MS 422. See Blume *et al., Sternbilder,* 274–279; John J. Contreni, *The Cathedral School of Laon from 850 to 930: Its Manuscripts and Masters* (Munich: Arbeo-Gesellschaft, 1978), 47–48; Obrist, “Manuscrits du *De cursu stellarum*” (arguing for a date ca. 800–830); Barbara Obrist, “The Astronomical Sundial in Saint Willibrord’s Calendar and Its Early Medieval Context,” *Archives d’Histoire Doctrinale et Littéraire du Moyen Âge* 67 (2000): 98–99; further, Borst, *Schriften,* I.238–239 (arguing for a date ca. 810– 830); Blume, “Wissenschaft,” 543–544 (arguing for a date ca. 830).
41. Obrist, “Manuscrits,” 343; Obrist, “Représentation,” 8–9.
42. Obrist, “Manuscrits,” 337 and pls. 32 and 33.
43. For the *De cursu stellarum,* see Stephen C. McCluskey, “Gregory of Tours”; McCluskey, *Astronomies and Cultures,* 101–110.
44. Antonio dell’Era, “Una rielaborazione dell’Arato latino,” *Studi Medievali,* ser. 3, no. 20 (1979): 269–298, including an edition of the text.
45. On the corporeality of the winds and seasons in this same manuscript, see Dieter Blume, “Körper und Kosmos im Mittelalter,” in *Bild und Körper im Mittelalter,* ed. Kristin Marek *et al.* (Munich: Wilhelm Fink, 2006), 228–230.
46. It seems unlikely that any of these manuscripts could have been used as “field guides to the night

sky.” For skepticism about the practical use of the individual star positions in the Leiden Aratus, whose miniatures are much larger and more virtuosically executed than those in Laon, see Elly Dekker, “The Provenance of the Stars in the Leiden *Aratea* Picture Book,” *Journal of the Warburg and Courtauld Institutes* 73 (2010): 1–37.

47. Two recent discussions have provided a firm basis for the study of this cluster: Borst, *Schriften,* esp. III.1054–1334, on the textual aspects of the Aachen compilation; and Eric Ramírez-Weaver, “Carolingian Innovation and Observation in the Paintings and Star Catalogs of Madrid, Biblioteca Nacional, Ms. 3307” (PhD diss., New York University, 2008), on the decoration of four of the major manuscripts.
48. Madrid, Biblioteca Nacional de España, Ms. 3307, the subject of a substantial scholarly literature. See especially: Eric Ramírez-Weaver, “Classical Constellations in Carolingian Codices: Investigating the Celestial Imagery of Madrid, Biblioteca Nacional, MS 3307,” in *Negotiating Secular and Sacred in Medieval Art: Christian, Islamic, and Buddhist,* ed. Alicia Walker and Amanda Luyster (Farnham, U.K.: Ashgate, 2009), 103–128; Ramírez-Weaver, “Carolingian Innovation”; Blume et al., *Sternbilder,* 354–359; Borst, *Schriften,* I.248–249; Borst, *Karolingische Reichskalender,* 178–180; Blume, “Wissenschaft,” 537–538; Manuel Sánchez Mariana, *Códice de Metz: Tratado de computo y astronomia* (Madrid: Testimonio, 1993); Lothar Boschen, *Die Annales Prumienses: Ihre nähere und ihre weitere Verwandtschaft* (Düsseldorf: Schwann, 1972), esp. 13–74; Wilhelm Koehler and Florentine Mütherich, *Karolingischen Miniaturen* (Berlin: Deutscher Verein für Kunstwissenschaft, 1930–99), III.119–127; Wilhelm Neuss, “Eine karolingische Kopie antiker Sternzeichen-Bilder im Codex 3307 der Biblioteca Nacional zu Madrid,” *Zeitschriften des Deutschen Vereins für Kunstwissenschaft* 8 (1941): 113–140.
49. Monza, Biblioteca Capitolare, F IX 176. Ramírez-Weaver, “Carolingian Innovation,” 383–390; Blume et al., *Sternbilder,* 366–371; Borst, *Schriften,* I.256–257; Borst, *Karolingische Reichs kalender*, 182–183; Blume, “Wissenschaft,” 543; Boschen, *Annales Prumienses,* 98–103; Annalisa Belloni and Mirella Ferrari, *La Biblioteca Capitolare di Monza* (Padua, Italy: Antenore, 1974), 106–107; Saxl et al., *Verzeich nis,* IV.52–61.
50. Vatican City, Biblioteca Apostolica Vaticana, MS Reg. lat. 309. Ramírez-Weaver, “Carolingian Innovation,” 363–371; Blume et al., *Sternbilder,* 496–501; Borst, *Schriften,* I.303–304; Borst, *Karolingische Reichskalender,* 184–185; Boschen, *Annales Prumienses,* esp. 151–152; Saxl et al., *Verzeichnis,* I.59–66.
51. Vatican, Biblioteca Apostolica Vaticana, MS Vat. lat. 645. Ramírez-Weaver, “Carolingian Innovation,” 372–378; Blume et al., *Sternbilder,* 482–487; Borst, *Schriften,* I.311–312; Borst, *Karolingische Reichskalender,* 183–184; Arno Borst, *Die karolingische Kalenderreform* (Hannover: Hahn, 1998), 405–408; Blume, “Wissenschaft,” 543; Blume, “Körper,” 228; Élisabeth Pellegrin et al., *Les manuscrits classiques Latins de la Bibliothèque Vaticane* (Paris: Éditions du Centre national de la recherche scientifique, 1975–2010), III.1.44–47; Boschen, *Annales Prumienses,* esp. 23 and 59–61; Saxl et al., *Verzeichnis,* I.71–76.
52. The text was edited by Borst as the *Libri computi* (“Aachener Enzyklopädie von 809”): *Schriften,* III.1040–1334.
53. The texts relating to the council have been edited by Harald Willjung, *Das Konzil von Aachen 809* (Hannover: Hahn, 1998). For a brief account see A. Edward Siecienski, *The Filioque: History of a Doctrinal Controversy* (Oxford: Oxford University Press, 2010).
54. Edited by Borst as the *Capitula, de quibus convocati compotiste interrogati fuerint, Schriften,* III.1040–1053. For a translation based on older editions, see Ramírez-Weaver, “Carolingian Innovation,” 76–82.
55. Borst, *Schriften,* I.90–91, III.1034–1039 and 1055.
56. Together with Paris, Bibliothèque nationale de France, Nouv. acq. lat. 456 (later and not illuminated, and therefore not discussed here), these four manuscripts form Borst’s “Fassung alpha.” His apparatus

also includes a “Fassung beta” (forty-two manuscripts containing significant portions of at least three of the work’s seven books), and a “Fassung gamma” (forty manuscripts containing fragments of three books or fewer). Borst, *Schriften,* III.1067–1086.

57. Missing in Madrid; edited by Borst, *Schriften,* III.1087–1091.
58. Or the corresponding *annus mundi* 4761. Borst, *Schriften,* III.1109; Boschen, *Annales Prumienses,* 19–21.
59. Not edited by Borst; see instead Boschen, *Annales Prumienses,* 90–91. Saint-Quentin omits this brief chronicle, inserting a local chronicle instead: Boschen, *Annales Prumienses*, 87 with fn. 21.
60. E.g., Borst, *Schriften,* III.1056–1057.
61. Borst, *Schriften,* III.1069.
62. Borst, *Schriften,* III.1064: “eine Synthese von antikem Naturverständnis und christlichem Zeitbewußtsein.”
63. Sometimes called the *De ordine ac positione stellarum in signis;* for the text, see Borst, *Schriften,* III.1251–1260.
64. Borst, *Schriften,* III.1252.
65. Borst, *Schriften,* III.1260–1274; Bruce Eastwood and Gerd Grasshoff, *Planetary Diagrams for Roman Astronomy in Medieval Europe, ca. 800– 1500* (Philadelphia: American Philosophical Society, 2004), 23–48.
66. Borst, *Schriften,* I.248–249; Boschen, *Annales Prumienses,* 85–86.
67. Ramírez-Weaver, “Carolingian Innovation,” 137–217.
68. The comparison to the Drogo Sacramentary was already made by Wilhelm Koehler, in Koehler and Mütherich, *Karolingischen Miniaturen,* III.122 with fn. 90; but compare III.53 fn. 66 for similarities to the “Group of the Coronation Gospels”; and Florentine Mütherich, “Die Buchmalerei am Hofe Karls des Großen,” in *Karolingische Kunst,* ed. Wolfgang Braunfels and Hermann Schnitzler (Düsseldorf: Schwann, 1965), 50. The case for Metz is pressed by Ramírez-Weaver (“Carolingian Innovation,” 53–55), whose attempt to tie the first team to Metz via a comparison to a snake in Paris, Bibliothèque nationale de France, Lat. 9388, does not convince. The case for Aachen is pressed by Blume *et al.* (*Sternbilder,* 357), making no distinction between the two teams of painters; cf. Blume, “Wissenschaft,” 538.
69. Boschen, *Annales Prumienses,* 78–84.
70. Borst, *Schriften,* III.1257.
71. Ramírez-Weaver, “Classical Constellations,” sees instead an attempt to remove “pagan” content.
72. Boschen, *Annales Prumienses,* 23; Borst, *Schriften,* I.303–304; cf. Blume et al., *Sternbilder,* 497.
73. Ramírez-Weaver, “Carolingian Innovation,” 114–118.
74. Borst, *Schriften,* I.311; Ramírez-Weaver, “Carolingian Innovation,” 108; Blume et al., *Sternbilder,* 483.
75. Ramírez-Weaver, “Carolingian Innovation,” 109. Borst’s argument in *Karolingische Kalenderreform,* 405–408, carried over into Borst, *Schriften,* I.311–312, does not convince; nor does the argument relating to the calculation of the *annus mundi,* summarized by Boschen, *Annales Prumienses,* 23 with fn. 63.
76. The arguments of Boschen (*Annales Prumienses,* 23 and 100 fn. 24) are conclusive.
77. Fundamentally, Fleckenstein, *Hofkapelle;* for the chancellery I.74–79; and cf. I.109–110 for a concise statement of the dual purpose of the *capella:* “die Institutionalisierung bestimmter, für die Herrschaft unentbehrlicher Funktionen, vor allem eben des herrscher-lichen Gottesdienstes und der schriftlichen Verwaltigungstätigkeit.”
78. Depreux, *Prosopographie,* 246–247.
79. Einhard, *Vita,* ch. 33; ed. Holder-Egger, 40; trans. Noble, *Charlemagne,* 49.
80. Depreux, *Prosopographie,* 194–196 and 250–256.

81. Depreux, *Prosopographie*, 163–167.
82. Fleckenstein, *Hofkapelle*, 52–56.
83. Fleckenstein, *Hofkapelle*, 81–84; Depreux, *Prosopographie*, 264–268.
84. Louis, Abbot of Saint-Denis, served as Charles's arch-chancellor until his death in 867, after which Charles himself became abbot and Gauzlin became arch-chancellor. After Charles died, Gauzlin became abbot. Fleckenstein, *Hofkapelle*, 145; Otto Gerhard Oexle, "Bischof Ebroin von Poitiers und seine Verwandten," *Frühmittelalterliche Studien* 3 (1969): 167–168 and 199–201; Sumner McKnight Crosby, *The Royal Abbey of Saint-Denis: From Its Beginnings to the Death of Suger, 475–1151* (New Haven: Yale University Press, 1987), 94–96.
85. Lothar II (864–869), Charles the Bald (870– 877), Louis the Stammerer (877–879), and Louis the Younger (879–880). See Alain Dierkens, *Abbayes et chapitres entre Sambre et Meuse (VIIe–XIe siècles): Contribution à l'histoire religieuse des campagnes du haut Moyen Âge* (Sigmaringen, Germany: Thorbecke, 1985), 109–111 and 129–130.
86. For the standard structure of a charter and the distribution of palace notaries during the reign of Charlemagne, see McKitterick, *Charlemagne*, 199–212.
87. Fols. 67v and 68r; see Ramírez-Weaver, "Carolingian Innovation," 213–214.
88. Munich, Bayerische Staatsbibliothek, Clm 210. See especially Blume et al., *Sternbilder*, 372–378; Blume, "Wissenschaft," 541; Borst, *Schriften*, I.257–258; Borst, *Karolingische Reichskalender*, I.197–198, 202–204, and 337–338; Carl I. Hammer, *Charlemagne's Months and Their Bavar ian Labours: The Politics of the Seasons in the Carolingian Empire* (Oxford: Archeopress, 1997); Bierbrauer, *Vorkarolingischen und karolingischen Handschriften*, 73–75; Bischoff, *Südostdeutschen Schreibschule*, II.34 (for Mondsee); Georg Swarzenski, *Die Salzburger Malerei: Von den ersten Anfängen bis zur Blutezeit des romanischen Stils* (Leipzig: Hiersemann, 1913), 13–21.
89. Vienna, Österreichische Nationalbibliothek, Cod. 387. See especially Blume et al., *Sternbilder*, 541–547; Blume, "Wissenschaft," 297; Borst, *Schriften*, I.313; Borst, *Karolingische Reichskalender*, I.198–200, 204, and 337–338; Bischoff, *Südostdeutschen Schreibschule*, II.96– 97; Saxl et al., *Verzeichnis*, II.8–9 and 79–81; Hermann Julius Hermann, *Die frühmittelalterlichen Handschriften des Abendlandes* (Leipzig: Hiersemann, 1923), 145–152; Swarzenski, *Salzburger Malerei*, 13–21. I follow Hermann's arguments for dating the manuscript to 818.
90. Borst, *Schriften*, III.1373.
91. The compilation is edited by Borst, *Schriften*, III.1383–1451. For a summary of its contents, see III.1369; "final victory" at III.1371.
92. See fundamentally Dekker, *Illustrating the Phaenomena*, 242–245 (on this map) and 142–180 (on the genre).
93. Borst, *Schriften*, III.1440. The loss of the corresponding miniature from Vienna may be recent; Swarzenski, *Salzburger Malerei*, 14, records a pendant to the Munich miniature at fol. 115r.
94. For the entries, see Hermann, *Frühmittel alterlichen Handschriften*, 145.
95. On Arn, see Meta Niederkorn-Bruck and Anton Scharer, eds., *Erzbischof Arn von Salzburg* (Vienna: R. Oldenbourg, 2004); Warren Brown, *Unjust Seizure: conflict, Interest, and Authority in an Early Medieval Society* (Ithaca, N.Y.: Cornell University Press, 2001), 102–123; Bullough, "Charlemagne's 'Men of God,' " 146–148. For his involvement with the computus, see Borst, *Schriften*, II.820–832.
96. For the attribution to Mondsee, see Bischoff, *Südostdeutschen Schreibschule*, II.34. Mondsee was an important center of scientific activity and manuscript production in the early ninth century. An origin at that scriptorium would also provide an easy explanation for the manuscript's eventual arrival in Regensburg, whose see assumed possession of Mondsee in 831: Felix Wintermayr, "Die Benediktiner-Abtei Mondsee," *Oberösterreichische Heimatblätter* 2 (1948): 195–196.
97. Hammer, *Charlemagne's Months*, considers the compendia in the context of Bavarian-imperial relations.

98. Brown, *Unjust Seizure*, 102–103.

99. For the promise of autonomy, see Kurt Reindel, “Bayern im Karolingerreich,” in *Persönlichkeit und Geschichte*, ed. Helmut Beumann (Düsseldorf: Schwann, 1965), 235–237; for the capella of Louis the German, see Fleckenstein, *Hofkapelle,* I.115–116.

100. So too Borst, *Schriften,* III.1372: “Das Kleinste mit dem Größten zu verklammern, gelang ihren [sc. the compendia’s] trockenen Texten nicht so gut wie ihren phantasievollen Bildern, die sich an antiken Dichtungen orientierten. Sie machten alle abstrakten Darlegungen nicht nur einsichtig, sondern obendrein anschaulich.”

101. Boschen, *Annales Prumienses,* 81.

102. Borst, *Schriften,* I.86: “Welcher Heilige wirklich in der heimischen Dorfkirche verehrt, welches Sternbild tatsächlich über dem Nachbarhügel sichtbar wurde, wußten Ortskundige ohnedies; lernen mußten sie jetzt, daß hinter den fernsten Bergen und unter den fremdesten Sternen Lebewesen ihresgleichen hausten und ihr Tagewerk nach ähnlichen Zeitskalen richteten.”

4. Byzantine Dissensus

1. Oxford, Bodleian Library, Auct. F. 3. 25. See Irmgard Hutter, *Corpus der byzantinischen Miniaturenhandschriften,* I: *Oxford, Bodleian Library I* (Stuttgart: Anton Hiersemann, 1977), 115; Daniele Bianconi, *Tessalonica nell’età dei Paleologi: Le pratiche intellettuali nel riflesso della cultura scritta* (Paris: Centre d’études byzantines, néo-helléniques et sud-est européennes, 2005), 194; Daniel Wakelin, “England: Humanism Beyond Weiss,” in *Humanism in Fifteenth-Century Europe*, ed. David Rundle (Oxford: Society for the Study of Medieval Languages and Literature, 2012), 281–282.

2. For discussion of the sources see Dekker, *Illustrating the Phaenomena*, 61.

3. Vatican City, Biblioteca Apostolica Vaticana, MS Vat. gr. 1087. See in general Fabio Guidetti and Anna Santoni, eds., *Antiche stelle a Bisanzio: Il codice Vaticano greco 1087* (Pisa: Edizioni della Normale, 2013). For its connections to Gregoras and his circle, see Inmaculada Pérez Martín, “La ‘Escuela de Planudes’: Notas paleográficas a una publicación reciente sobre los escolios Euripideos,” *Byzantinische Zeitschrift* 90 (1997): 83 and fn. 53; Mariella Menchelli, “Struttura e mani del Vat. gr. 1087 (con osservazioni paleografiche sul copista C e il Marc. gr. 330),” in Guidetti and Santoni, *Antiche stelle*, 34–40.

4. For descriptions of the contents, see Albert Rehm, *Eratosthenis Catasterismorum fragmenta Vaticana* (Ansbach, Germany: Brügel, 1899), i–iii; Menchelli, “Struttura,” 18–22.

5. The cycle is illustrated in full by Guidetti and Santoni, *Antiche stelle,* 182–183. On the hemispheres, see Dekker, *Illustrating the Phaenomena*, 223–225; and 247–249 on the planisphere.

6. On this figure see Anna Santoni, “I *Fenomeni* di Arato e i *Catasterismi* di Eratostene nelle illustrazioni del manoscritto Vat. gr. 1087,” in Guidetti and Santoni, *Antiche stelle*, 101–102.

7. Fabio Guidetti, “L’apparato iconografico del codice Vat. gr. 1087: per la ricostruzione dell’edizione tardoantica del *corpus* arateo,” in Guidetti and Santoni, *Antiche stelle*, 113–152, esp. 146–152; Martin, *Histoire du texte,* 42–51.

8. Milan, Biblioteca Ambrosiana, H 57 Sup. (=437). See David Pingree, “An Illustrated Greek Astro nomical Manuscript: Commentary of Theon of Alexandria on the *Handy Tables* and Scholia and Other Writings of Ptolemy Concerning Them,” *Journal of the Warburg and Courtauld Institutes* 45 (1982): 185–192; the quote at 191.

9. Tblisi, National Center of Manuscripts, A-65. See W. Ponomarew, “Georgien,” in *Reallexikon zur byzantinischen Kunst*, ed. Klaus Wessel and Marcell Restle (Stuttgart: Hiersemann, 1966–), II.721–722; [G.] Alibegachvili, “L’art de la miniature géorgienne des XIe–début XIIIe siècles,” in *Atti de Primo Simposio Internazionale sull’Arte Georgiana*, ed. G. Ieni (Milan, 1977), 25–26.

10. Most recently on the institution, see Sofia Kotzabassi, ed., *The Pantokrator Monastery in Constantinople* (Boston: de Gruyter, 2013).
11. Arthur H. S. Megaw, “Notes on Recent Work of the Byzantine Institute in Istanbul,” *Dumbarton Oaks Papers* 17 (1963): 335–340.
12. Robert Ousterhout, “Architecture, Art, and Komnenian Ideology at the Pantokrator Mona stery,” in *Byzantine Constantinople: Monuments, Topography, and Everyday Life*, ed. Nevra Necipoğlu (Leiden: Brill, 2001), 133–150, quote at 145. For the late antique mosaics, see Henry Maguire, *Earth and Ocean: The Terrestrial World in Early Byzantine Art* (University Park: Pennsylvania State University Press, 1987). For a twelfth-century Italian comparison, see the mosaic in the crypt of S. Savino in Piacenza: Charles E. Nicklies, “Cosmology and the Labors of the Months at Piacenza: The Crypt Mosaic at San Savino,” *Gesta* 34 (1995): 108–125, with discussion of related monuments.
13. The frieze has recently been dated to the second century A.D.: Olga Palagia, “The Date and Iconography of the Calendar Frieze on the Little Metropolis, Athens,” *Jahrbuch des Deutschen Archäologischen Instituts* 123 (2008): 215–237.
14. For a recent discussion, see Cohen, *Transformations of Time*, 87–111.
15. For the earlier date, see Eunice Dauterman Maguire and Henry Maguire, *Other Icons: Art and Power in Byzantine Secular Culture* (Princeton: Princeton University Press, 2007), 125–131; for the fifteenth-century date, see Bente Kiilerich, “Making Sense of the Spolia in the Little Metropolis at Athens,” *Arte Medievale* N.S. 4 (2005): 95–114.
16. Mt. Sinai, Monastery of St. Catherine, Sin. gr. 1186; and Florence, Biblioteca Medicea Laurenzi ana, Laur. Plut. IX.28. In general on the illumination of Kosmas’s text, see Maja Kominko, *The World of Kosmas: Illustrated Byzantine Codices of the* Christian Topography (Cambridge: Cambridge University Press, 2013). On the Florence copy, see Jeffrey C. Ander son, ed., *The Christian Topography of Kosmas Indikopleustes: Firenze, Biblioteca Medicea Laurenziana, Plut. 9.28*. (Rome: Edizioni di Storia e Letteratura, 2013).
17. Venice, Biblioteca Marciana, Marc. gr. 516, fol. 141v. Italo Furlan, *Codici greci illustrati della Biblioteca Marciana* IV (Milan: Edizioni Stendhal, 1981), pl. 7.
18. For the text, see Christopher of Mitylene, *Poems*, ed. Eduard Kurtz (Leipzig: Neumann, 1903), 23–26; for a translation and commentary, see Paul Magdalino, “Cosmological Confectionery and Equal Opportunity in the Eleventh Century: An Ekphrasis by Christopher of Mitylene (Poem 42),” in *Byzantine Authors: Literary Activities and Pre occupations*, ed. John W. Nesbitt (Leiden: Brill, 2003), 1–6.
19. For the subsequent development of this tradition, see Blume et al., *Sternbilder;* Duits, “Celestial transmissions”; Mechtild Haffner, *Ein antiker Sternbilderzyklus und seine Tradierung in Handschriften vom frühen Mittelalter bis zum Humanismus: Untersuchungen zu den Illustrationen der “Aratea” des Germanicus* (Hildesheim: Georg Olms Verlag, 1997).
20. Carey, “Al-Sufi”; Carey, “Mapping the mnemonic.” For a survey of high medieval Islamic astronomical iconography, see Caiozzo, *Images du ciel.* On the formation of the “Sufi Latinus” corpus, see Paul Kunitzsch, “The Astronomer Abu ‘l-Husayn al-Sūfī and his Book on the Constellations,” *Zeitschrift für Geschichte der arabisch-islamischen Wissenschaften* 3 (1986): 56–81.
21. Paul Magdalino, *L’orthodoxie des astrologues: La science entre le dogme et la divination à Byzance (VIIe–XIVe siècle)* (Paris: Lethielleux, 2006).
22. Vatican City, Biblioteca Apostolica Vaticana, MS Vat. gr. 1291. The most complete published descriptions are Timothy Janz, “The Scribes and Date of the Vat. Gr. 1291,” *Miscellanea Bibliothecae Apostolicae Vaticanae* 10 (2003): 159–180; Leslie Brubaker and John Haldon, *Byzantium in the Iconoclast Era (c. 650–850): The Sources* (Aldershot, U.K.: Ashgate, 2001), 36–40; Anne Tihon, “Les *tables faciles* de Ptolémée dans les manuscrits en onciale (IXe–Xe siècles),” *Revue d’Histoire des Textes* 22 (1992): 61–64; Franz Boll, “Beiträge zur Ueberlieferungsgeschichte der griechischen Astrologie und Astronomie,” *Sitzungsberichte der philos.- phil. und der histor. Classe der k. bayer.*

Akad. d. Wiss., part 1 (1899): 112–115. Cf. Blume, *Sternbilder,* 469–476. On the term "Handy Tables," understood not as a discrete work but as the genre of collections of information useful for astronomers and astrologers, see William Duane Stahlman, "The Astronomical Tables of Codex Vaticanus Graecus 1291" (PhD diss., Brown University, 1960), 2–17; Tihon, "*Tables faciles*," 70–79.

23. The sixty-six tables were edited by Stahlman, *Astronomical tables*, 30–173. They occupy the bulk of the manuscript, fols. 22r–94v.
24. Fols. 17v–21v: see Ernst Honigmann, *Die sieben Klimata und die πόλεις επίσημοι: Eine Untersuchung zur Geschichte der Geographie und Astrologie im Altertum und Mittelalter* (Heidelberg: C. Winter, 1929), 193–208, with edition of the table from the Vatican Ptolemy and concordance with the text of Ptolemy.
25. Fols. 5r–8r: see Tihon, "*Tables faciles,*" 54, 62, and 78. Recently on the Stephanos problem, see Mossman Roueché, "Stephanus the Alexandrian Philosopher, the *Kanon*, and a Seventh-Century Millennium," *Journal of the Warburg and Courtauld Institutes* 74 (2011): 1–30.
26. Fols. 16v–17r. On the royal canon, see Alden A. Mosshammer, *The Easter Computus and the Origins of the Christian Era* (Oxford: Oxford University Press, 2008), 17–18.
27. David H. Wright, "The Date of the Vatican Illuminated Handy Tables of Ptolemy and of Its Early Additions," *Byzantinische Zeitschrift* 78 (1985): 355–362; and Ihor Ševčenko, "The Search for the Past in Byzantium Around the Year 800," *Dumbarton Oaks Papers* 46 (1992): 279–293; followed by Brubaker and Haldon, *Sources,* 38; Magdalino, *Orthodoxie,* 23; Leslie Brubaker and John Haldon, *Byzantium in the Iconoclast Era (c. 650–850): A History* (Cambridge: Cambridge University Press, 2011), 220; Anderson, "World Image," 80.
28. Janz, "Scribes," 166–169. This argument requires an exemplar from the reign of Constantine V, copied by scribe "alpha" and then brought up to date by his colleague "beta." Thus Janz, "Scribes," 167: "While it is fairly clear that scribe α found no names after that of Constantine V (740–775) in his exemplar of the Canon, there is no particular reason to suppose that his exemplar was up to date."
29. For this account, see Boll, "Beiträge," 126–128.
30. Anne Tihon, "L'astronomie à Byzance à l'époque iconoclaste (VIIIe–IXe siècles)," in *Science in Eastern and Western Civilization in Carolingian Times*, ed. Paul Leo Butzer and Dietrich Lohrmann (Basel: Birkhäuser Verlag, 1993), 196–200. Earlier analyses generated more precise dates: see Boll, "Beiträge," 128–132; Paul Schnabel, "Die Entstehungsgeschichte des kartographischen Erdbildes des Klaudios Ptolemaios," *Sitzungsberichte der preußischen Akademie der Wissenschaften, Philos. Hist. Kl.* 14 (1930): 223; Bartel L. van der Waerden, "Eine byzantinische Sonnentafel," *Sitzungsberichte der mathematisch-naturwissenschaftlichen Klasse der Bayerischen Akademie der Wissenschaften zu München*, Jahrgang 1954 (1955): 159–168.
31. Janz, "Scribes," 172–173; Anderson, "World Image," 84. For an analysis of these paintings, see Dekker, *Illustrating the Phaenomena*, 225–227.
32. The fifteenth-century date is provided by the ex libris of Domenico Domenici, bishop of Brescia, on fol. 4v, and his coat of arms on fol. 5r. For the text see Joseph Mogenet, "Les scolies astronomiques du Vat. gr. 1291," *Bulletin de l'Institut Historique Belge de Rome* 40 (1969): 69–91; text edited at 73, translation and commentary at 84–85.
33. Ševčenko, "Search for the Past," quote at 287.
34. Theophanes, *Chronographia*, ed. de Boor, 468; trans. Mango and Scott, 643.
35. Pingree, "Classical and Byzantine Astrology," 239.
36. Leo VI, *Taktika*, ed. and trans. George T. Denis (Washington, D.C.: Dumbarton Oaks, 2010), 640–641.
37. Leo VI, *Taktika*, 562–565.
38. The other three are: Leiden, Universiteitsbibliotheek, BPG 78; Florence, Biblioteca Medicea Laurenziana, Lauren tianus 28–26; and Venice, Biblioteca Marciana, Marc. gr. 331. See in general

Tihon, “*Tables faciles.*”

39. The tables are those of the right and oblique ascensions (fols. 22r–37v), a table for computing lunar latitudes (45v–46r), and a table of the moon’s hourly course in anomaly (46r). They are edited by Stahlman, “Astronomical Tables,” tables 1–8 and 23–24.
40. Brubaker and Haldon, *Sources*, 39–40; cf. Brubaker and Haldon, *History*, 224.
41. The first hand was responsible for fols. 22r–23v and the second for fols. 24r–37v. The last folio of the third gathering is 27, in the middle of the group executed by the second hand.
42. The shared diagrams are the “description of the horizons” at 45r (compare Leiden BPG 78, fol. 100v), the epact table at 47r (compare Leiden BPG 78, fol. 2v), and the painting of the latitudes of Mercury at 47v (compare Leiden BPG 78, fol. 97v). The diagrams unique to the Vatican Ptolemy are the solar diagram at 9r and the diagram at 46r, described by Tihon as “incomprehensible” (“*Tables faciles,*” 81).
43. Useful explanation by Mosshammer, *Easter Computus*, 75–80.
44. Boll, “Beiträge,” 124, perceived “in jeder Hand eine Fackel”; the stub of a torch may be visible in her right, but none can be seen in the left.
45. Anderson, “World Image,” 494.
46. So too Janz, “Scribes,” 161.
47. The table in the Vatican Ptolemy begins the cycle with epact 20 and expresses the “saltus” (or leap) between epacts 29 and 11, that is, years 10 and 11 of the cycle. This does not correspond with any of the known early Byzantine systems, which invariably begin the cycle two years later, with epact 11/12, and may express the saltus at various places, but never in the same manner as the Vatican table. For a summary of the early Byzantine systems, see Venance Grumel, *La chronologie* (Paris: Presses Universitaires de France, 1958), 54–55.
48. For the text, see Anderson, “World Image,” 96. Translated, it reads: “Having the years since Diocletian in your hand, subtract from them one. Divide the result by nineteen. And multiply the remainder by 19 [*sic*]. And divide by thirty. And call the remainder the epact. By way of example, let the year be 239. Subtracting 1 = 238. [Dividing by] 19 [there are] ten times nineteen and twice nineteen; [the remainder] = 10. This [multiplied] by eleven becomes ten times nineteen [*sic*], 110. I divide three times [*sic*] [by] thirty, [and] the remainder of this I call the epact.” The correct procedure is given by Maximus the Confessor in his treatise on calculating the date of Easter (*Patrologia Graeca* 19: 1245, with 1272). The scribe of the Vatican manuscript has entered a false multiplicand in the third step, which has been carried over to the calculation as related in the text (“ten times nineteen”) although not in the digits, where the correct result (110) is given.
49. Similar considerations apply to the four medallions positioned at the corners of the rectangular frame. Each is occupied by two female figures in various habits: in the medallion at upper left, the left figure wears red and the right figure blue; while in the medallion at upper right one figure wears green over red, the other gold. The figures engage their partners with a variety of gestures; thus at lower right the figures face each other, with the right hand of one curved inward toward her chin. These have been understood as personifications of day and night, on the argument that each pair contains one figure in light garb, the other in dark (see Boll, “Beiträge,” 124, followed by Brubaker and Haldon, *Sources*, 38), but no such distinction was maintained by the painter, nor would the logic of the diagram require a single depiction of night and day, much less four. Like the text at the top of the folio, these figures may be defective copies of a poorly understood exemplar.
50. *Pace* Janz, “Scribes,” 161: “everything else in the (original) manuscript was clearly copied from an exemplar: why not this?”
51. Brubaker and Haldon, *Sources*, 39, with comparison of the figures of Virgo at 9r and 23r.
52. Brubaker and Haldon, *Sources*, 40, invoke the possibility of a third painter to explain the differences.
53. Compare the charioteer silks in Aachen and Brussels, conventionally dated to the eighth or ninth

century: Brubaker and Haldon, *Sources,* 93–94; Anna Muthesius, *Byzantine Silk Weaving: AD 400 to AD 1200* (Vienna: Fass baender, 1997), 72–73, cat. nos. M29 and M30, with pls. 22A and 23A. For reliefs, compare the Porphyrius bases in Istanbul (Nezih Fıratlı, *La sculpture byzantine figurée au Musée Archéologique d'Istanbul* [Paris: Jean Maisonneuve, 1990], 30–34 and pls. 23–24) and the middle Byzantine reliefs of the ascension of Alexander on the north facade of San Marco and in Istanbul (André Grabar, *Sculptures byzantines du Moyen Âge (XIe–XIVe siècle)* [Paris: A. Maisonneuve, 1976], 75 with pl. 52a, and 37 with pl. 3c, respectively).

54. So too Anthony Cutler and Jean-Michel Spieser, *Byzance médiévale: 700–1240* (Paris: Gallimard, 1996), 46.
55. For the girdle in which this solidus is preserved, see Philip Grierson, "The Kyrenia Girdle of Byzantine Medallions and Solidi," *Numismatic Chronicle,* ser. 6, 15 (1955): 55–70; for the Louvre medallion, with further comparanda, see Cécile Morrisson, "Araba yarışçısı olarak muzaffer imparator / The Emperor in Triumph as Charioteer," in *Hippodrom / Atmeydanı: İstanbul'un tarih sahnesi,* ed. Brigitte Pitarakis (Istanbul: Pera Müzesi, 2010), I.44–48.
56. Compare the Codex-Calendar of 354: Michele Salzman, *On Roman Time: The Codex-Calendar of 354 and the Rhythms of Urban Life in Late Antiquity* (Berkeley: University of California Press, 1990), 30–32 and fig. 11.
57. Ann Hyland, *Equus: The Horse in the Roman World* (New Haven: Yale University Press, 1990), 238–239.
58. Theophanes, *Chronographia,* ed. de Boor, 474; trans. Mango and Scott, 651.
59. Constantine VII, *De ceremoniis aulae byzantinae,* ed. Johann Jacob Reiske (Bonn: Weber, 1829), I.105.
60. Katherine M. D. Dunbabin, "The Victorious Charioteer on Mosaics and Related Monuments," *American Journal of Archaeology* 86 (1982): 85–86.
61. Wright, "Date," 361: "The Vatican Ptolemy was used actively, and with good understanding, for about five generations."
62. A text preserved in the early medieval *Parastaseis Syntomoi Chronikai* attributes the office of "imperial astronomer" to one Ligurios in the service of Leo I (457–474): ch. 64; trans. Cameron and Herrin, 147. Paul Magdalino also proposes that the early medieval manuscripts of the *Handy Tables* "were copied expressly for the use of highly placed astrologers in court circles": "The Byzantine Reception of Classical Astrology," in *Literacy, Education and Manuscript Transmission in Byzantium and Beyond,* ed. Catherine Holmes and Judith Waring (Leiden: Brill, 2002), 35.
63. Vatican City, Biblioteca Apostolica Vaticana, Vat. gr. 699. See the description in Kominko, *World of Kosmas,* 227–230, with references to earlier bibliography. Note especially Leslie Brubaker, "The *Christian Topography* (Vat. gr. 699) Revisited: Image, Text, and Conflict in Ninth-Century Byzantium," in *Byzantine Style, Religion and Civilization: In Honour of Sir Steven Runciman,* ed. Elizabeth Jeffreys (Cambridge: Cambridge University Press, 2006), 3–24. For a facsimile, see Cosimo Stornajolo, *Le miniature della Topografia Cristiana di Cosma Indicopleuste, Codice Vaticano Greco 699* (Milan: U. Hoepli, 1908).
64. Brubaker, "*Christian Topography,*" 6–7.
65. Brubaker, "*Christian Topography,*" 5–8; and Kominko, *World of Kosmas,* 230 with fn. 11. A case for an Italian provenance, with assistance from Constantinopolitan miniaturists, was made by Julien Leroy, "Notes codicologiques sur le Vat. Gr. 699," *Cahiers Archéologiques* 23 (1974): 73–79.
66. Kominko, *World of Kosmas,* 10–23; Wanda Wolska, *La Topographie Chrétienne de Cosmas Indicopleustès: Théologie et science au VIe siècle* (Paris: Presses Universitaires de France, 1962), 1–11; Milton V. Anastos, "The Alexandrian Origin of the 'Christian Topography' of Cosmas Indicopleustes," *Dumbarton Oaks Papers* 3 (1946): 73–80.
67. Benjamin Anderson, review of *The World of Kosmas: Illustrated Byzantine Codices of the "Christian*

Topography" by Maja Kominko, *Studies in Iconography* 36 (2015): 202 and 208 fn. 7.

68. Kominko, *World of Kosmas;* the basics of the stemma at 7–9. For the two eleventh-century manuscripts see fn. 16 above.
69. Kominko, *World of Kosmas*, 42–48.
70. Kosmas Indikopleustes, *Christian Topography*, VIII.25; ed. and trans. Wanda Wolska-Conus (Paris: Éditions du Cerf, 1968–1973), III.195.
71. For their relationship, see Anderson, review of Kominko, 204–205, with references to earlier literature.
72. Invoked at Kosmas, *Christian Topography* IV.25; ed. Wolska-Conus, I.569. The Vatican Kosmas is missing an entire quire covering the text from IV.23 to V.19: Kominko, *World of Kosmas*, 229.
73. Kominko, *World of Kosmas*, 77–83.
74. Photios, *Bibliothēkē*, Cod. 36; ed. René Henry (Paris: Les Belles Lettres, 1959–1977), I.21–22.
75. Fundamentally Kathleen Corrigan, *Visual Polemics in the Ninth-Century Byzantine Psalters* (Cambridge: Cambridge University Press, 1992); on the historical images 27–42. More recent studies of the marginal psalters include Jeffrey C. Anderson, "The Creation of the Marginal Psalter," in *Ritual and Art: Byzantine Essays for Christopher Walter*, ed. Pamela Armstrong (London: Pindar, 2006), 44–65; Maria Evangelatou, "Liturgy and the Illustration of the Ninth-Century Marginal Psalters," *Dumbarton Oaks Papers* 63 (2009): 59–116; Georgi Parpulov, *Toward a History of Byzantine Psalters, ca. 850–1350 AD* (Plovdiv, Bulgaria: 2014), 86–93.
76. Moscow, State Historical Museum, Cod. 129, fol. 133r. M. V. Ščepkina, *Miniatjuri Khludovskoi Psaltiri* (Moscow: Iskusstvo, 1977). In addition to the borrowings discussed below, see Brubaker, "*Christian Topography*," 13; Corrigan, *Visual Polemics*, 25, 42, and 68; and Suzy Dufrenne, "Une illustration 'historique,' inconnue, du Psautier du Mont-Athos, Pantocrator No. 61," *Cahiers Archéologiques* 15 (1965): 90–91.
77. For discussion of this image, see Maja Kominko, "New Perspectives on Paradise: The Levels of Reality in Byzantine and Latin Medieval Maps," in *Cartography in Antiquity and the Middle Ages: Fresh Perspectives, New Methods*, ed. Richard J. A. Talbert and Richard W. Unger (Leiden: Brill, 2008), 142–145.
78. Moscow, State Historical Museum, Cod. 129, fols. 101v and 103r; Paris, Bibliothèque nationale de France, Par. gr. 20, fol. 9r.
79. See the index to Kosmas, *Christian Topography*, ed. Wolska-Conus, III.444–445.
80. Brubaker, "*Christian Topography*."
81. For accounts of the scholarly discussion on the origins and function of the ninth-century marginal psalters, see Evangelatou, "Liturgy," 60–61 with fn. 11; and Corrigan, *Visual Polemics*, 124–134. On the rubrics, see Corrigan, *Visual Polemics*, 127–129; and Parpulov, *Toward a History*, 88–93, who concludes that the original owner of Khludov must have lived in a monastery.
82. Anderson, "Creation of the Marginal Psalter," understands the Paris fragment as a product of Methodios's Italian exile (815–821) and the Khludov and Pantokrator psalters as later ninth-century continuations of the tradition that it established. To the arguments adduced to date for Methodios, we might add that Photios's disdain for Kosmas's cosmology renders its adoption in a manuscript produced under his supervision unlikely. Nevertheless, that Photios had access to a copy of Kosmas is suggestive: perhaps the illuminators of the marginal psalters employed the same copy of the *Christian Topography* during the patriarchate of Methodios that Photios later consulted.
83. Magdalino, *Orthodoxie*, 50–51 and 55–68;C Mavroudi, "Translations," 46–47.
84. Sebastian Brock, "Iconoclasm and the Monophysites," in *Iconoclasm*, ed. Anthony Bryer and Judith Herrin (Birmingham, U.K.: Centre for Byzantine Studies, 1977), 57. A similar argument is made by Peter Brown in "A Dark-Age Crisis: Elements of the Iconoclastic Controversy," *English Historical Review* 88 (1973): 1–34.

85. Gilbert Dagron, “L’ombre d’un doute: L’hagio graphie en question, VIe–XIe siècle,” *Dumbarton Oaks Papers* 46 (1992): 59–68.

86. Basil of Caesarea, *Homilies on the Hexaemeron,* IX.1; ed. Stanislas Giet (Paris: Éditions du Cerf, 1950), 480–482; trans. Agnes Clare Way (Washington, D.C.: Catholic University Press, 1963), 135–136. Further John F. Callahan, “Greek Philosophy and the Cappadocian Cosmology,” *Dumbarton Oaks Papers* 12 (1958): 43.

87. Paul van den Ven, “La vie grecque de S. Jean le Psichaïte, confesseur sous le règne de Léon l’Arménien (813–820),” *Muséon* N.S. 3 (1902): 109–110. For the date see Brubaker and Haldon, *Sources,* 216; and Ann Moffatt, “Schooling in the Iconoclast Centuries,” in *Iconoclasm*, ed. Anthony Bryer and Judith Herrin (Birmingham, U.K.: Centre for Byzantine Studies, 1977), 86; cf. Stephanos Efthymiadis, “Hagiography from the ‘Dark Age’ to the Age of Symeon Metaphrastes (Eighth–Tenth Centuries),” in *The Ashgate Research Companion to Byzantine Hagiography*, I: *Periods and Places*, ed. Stephanos Efthymiadis (Farnham, U.K.: Ashgate, 2011), 111–112. For traces of a similar attitude in the works of the eighth-century iconophile theologian John of Damascus, see Veronica della Dora, *Landscape, Nature, and the Sacred in Byzantium* (Cambridge: Cambridge University Press, 2016), 65–67.

88. For a synthetic account of the Octateuchs, including extensive engagement with earlier secondary literature, see John Lowden, “Illustrated Octateuch Manuscripts: A Byzan tine Phenomenon,” in *The Old Testament in Byzantium*, ed. Paul Magdalino and Robert Nelson (Washington, D.C.: Dumbarton Oaks Research Library and Collection, 2010), 107–152.

89. For commentary on all preserved miniatures from the Octateuchs representing this scene, see Kurt Weitzmann and Massimo Bernabò, *The Byzantine Octateuchs* (Princeton: Princeton University Department of Art and Archaeology, 1999), 20–21.

90. For a similar reading of two further miniatures from the Vatican Octateuch, see Cynthia Hahn, “The Creation of the Cosmos: Genesis Illustration in the Octateuchs,” *Cahiers Archéologiques* 28 (1979): 39.

91. Lowden, “Illustrated Octateuch Manuscripts,” 111–115.

92. Hahn, “Creation of the Cosmos,” 29–31.

93. Anne-Laurence Caudano, “Un univers sphérique ou voûté? Survivance de la cosmologie antiochienne à Byzance (XIe et XIIe s.),” *Byzantion* 78 (2008): 66–86.

94. Anne-Laurence Caudano, “ ‘Le ciel a la forme d’un cube ou a été dressé comme une peau’: Pierre le Philosophe et l’orthodoxie du savoir astronomique sous Manuel Ier Comnène,” *Byzantion* 81 (2011): 19–73.

95. Émmanuel Amand de Mendieta and Stig Y. Rudberg, eds., *Eustathius: Ancienne version latine des neuf homélies sur l’Hexaéméron de Basile de Césarée* (Berlin: Akademie-Verlag, 1958); Georg Graf, *Geschichte der christlichen arabischen Literatur* (Vatican City: Biblioteca Apostolica Vaticana, 1944–1953), II.56.

96. Ahmet T. Karamustafa, “Cosmographical Diagrams,” in *Cartography in the Traditional Islamic and South Asian Societies*, ed. J. B. Harley and David Woodward (Chicago: University of Chicago Press, 1992), 71–89, here at 72. There is evidence for limited awareness of Antiochene cosmological ideas in early medieval Europe, including two exceedingly brief passages from Kosmas’s works translated into Latin: see Michael W. Herren in his edition of *The* Cosmography of Aethicus Ister (Turnhout, Belgium: Brepols, 2011), l–li.

97. Leiden, Universiteitsbibliotheek, Voss. lat. Q 79. See Blume et al., *Sternbilder,* I.292–298, with references to the extensive literature.

98. See, e.g., Martin, *Histoire du texte,* 40.

99. Germanicus, *Arati Phaenomena,* lines 1–16; ed. André Le Boeuffle (Paris: Belles Lettres, 1975), 1–2. For the early imperial context see, e.g., R. Elaine Fantham, “Ovid, Germanicus, and the Composition

of the *Fasti,*” *Papers of the Liverpool Latin Seminar* 5 (1985): 243–281.

100. For this account of the diagram, see Bruce Eastwood, “Origins and Contents of the Leiden Planetary Configuration (MS Voss. Q. 79, Fol. 93v), an Artistic Astronomical Schema of the Early Middle Ages,” *Viator* 14 (1983): 1–40; the quote at 2.
101. Elly Dekker, “Carolingian Planetary Observations: The Case of the Leiden Planetary Configuration,” *Journal of the History of Astronomy* 39 (2008): 77–90. This is adopted by Blume et al., *Sternbilder,* I.295, as the date of the manuscript itself. Stylistic arguments for a date later in Louis’s reign are presented in Koehler and Mütherich, *Die karolingischen Miniaturen*, IV.82; further developed in Florentine Mütherich, “Die Bilder des Leidener Aratus,” in *Aratea: Kommentar zum Aratus des Germanicus Ms. Voss. lat. Q. 79, Bibliotheek der Rijksuniversiteit Leiden* (Lucerne, Switzerland: Faksimile Verlag Luzern, 1989), 31–68; Florentine Mütherich, “Book Illumination at the Court of Louis the Pious,” in *Charlemagne’s Heir: New Perspectives on the Reign of Louis the Pious,* ed. Peter Godman and Roger Collins (Oxford: Clarendon, 1990), 593–604.
102. Panofsky, *Renaissance,* 39. Panofsky was hardly the only author to think of Pompeii in connection with the Leiden miniatures: an impressive list is compiled by C. L. Verkerk, “*Aratea*: A Review of the Literature Concerning MS. Vossianus lat. q. 79 in Leiden University Library,” *Journal of Medieval History* 6 (1980): 262–264.
103. For the legends, see Cyril Mango, “The Legend of Leo the Wise,” *Zbornik Radova Vizantoloshkog Instituta* 6 (1960): 59–93. For the reign, see Shaun Tougher, *The Reign of Leo VI (886–912): Politics and People* (Leiden: Brill, 1997); 118–122 for his early reputation for sagacity.
104. Text edited by Georges Kolias, *Léon Choerosphactès: Magistre, proconsul, et prince* (Athens: Verlag der “Byzantinisch-neugriechischen Jahrbücher,” 1939), 77.
105. For the date, see Paul Magdalino, “The Bath of Leo the Wise,” in *Maistor: Classical, Byzantine, and Renaissance Studies for Robert Browning,* ed. Ann Moffatt (Canberra: Australian Association for Byzantine Studies, 1984), 226.
106. Summarized and evaluated by Paul Magdalino in “The Bath of Leo the Wise and the ‘Macedonian Renaissance’ Revisited: Topography, Ceremonial, Ideology,” *Dumbarton Oaks Papers* 42 (1988): 100–103.
107. Edited and translated in Magdalino, “Bath Revisited,” 117–118.
108. Magdalino (“Bath Revisited,” 99–100) identifies the bath of Leo with the “Bath of the Oikonomeion” described in the tenth-century *Patria,* to which that text attributes seven niches or halls (“ethnēkai”) in imitation of the seven planets and twelve porticoes (“stoai”) in imitation of the twelve months of the year (*Patria,* I.60; ed. and trans. Albrecht Berger [Cambridge: Harvard University Press, 2013], 36–37).

Conclusion

1. George of Pisidia, *Poems,* 7.100–103; ed. and trans. Luigi Tartaglia (Turin: Unione Tipografico-Editrice Torinese, 1998), 256–257. On this poem, see Howard-Johnston, *Witnesses,* 18–19.
2. Fredegar, *Chronicle,* IV.65; ed. and trans. J. M. Wallace-Hadrill (London: Thomas Nelson and Sons, 1960), 53–56. For a similar tradition in al-Bukhari, see Robert G. Morrisson, “Discussions of Astrology in Early Tafsīr,” *Journal of Quraʾnic Studies* 11 (2009): 55.
3. Magdalino, *Orthodoxie,* 35 for the introduction to Theon; 38 for the text on brontoscopy and “la figure de l’empereur astrologue et alchimiste.”
4. Einhard, *Vita,* ch. 25; ed. Holder-Egger, 30; translation after Noble, *Charlemagne,* 42.
5. Al-Masʿūdī, *Murūj al-dhahab,* ed. Meynard and Courteille, VI.11–12. Discussed, e.g., by Robert Hillenbrand, “*La dolce vita* in Early Islamic Syria: The Evidence of Later Umayyad Palaces,” *Art History* 5 (1982): 32 fn. 216.

6. Fowden, *Qusayr ʿAmra*, 82–83.
7. George Saliba, “The Role of the Astrologer in Medieval Islamic Society,” *Bulletin d’Études Orientales* 44 (1992): 54. This essay is a mine of sources on the role of astrologers in medieval Islamic courts. See further Antoine Borrut, “Court Astrologers and Historical Writing in Early ʿAbbāsid Baghdād: An Appraisal,” in *The Place to Go: Contexts of Learning in Baghdād, 750–1000 C.E.*, ed. Jens Scheiner and Damien Janos (Princeton, N.J.: Darwin, 2014), 455–501, esp. 461–464.
8. For power and authority as conceived in recent studies of early medieval Europe, see Ildar H. Garipzanov, *The Symbolic Language of Authority in the Carolingian World (c. 751–877)* (Leiden: Brill, 2008).
9. See Anthony Kaldellis, *The Byzantine Republic: People and Power in New Rome* (Cambridge: Harvard University Press, 2015).
10. “Die kosmische, bildhafte Orientierung”: Warburg, “Einwirkung,” 125.
11. Aratus, *Phaenomena*, ed. and trans. G. R. Mair (London: Heinemann, 1921), 206–207.
12. McCluskey, “Gregory of Tours,” for an effort in the west; and for an effort in the east, Gilbert Dagron, “Das Firmament soll christlich werden: Zu zwei Seefahrtskalendern des 10. Jahrhunderts,” in *Fest und Alltag in Byzanz*, ed. Günter Prinzing and Dieter Simon (Munich: C. H. Beck, 1990), 145–156.
13. See Caiozzo, *Images du ciel*, 62–64; Carey, “Mapping the Mnemonic,” 65–66.
14. Kominko, *World of Kosmas*, 212, and 74–76 on the version of the zodiac depicted in the manuscripts.
15. Mavroudi, “Translations,” 28–36.
16. Lawrence Nees, “Introduction,” *Speculum* 72 (1997): 960–961.

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